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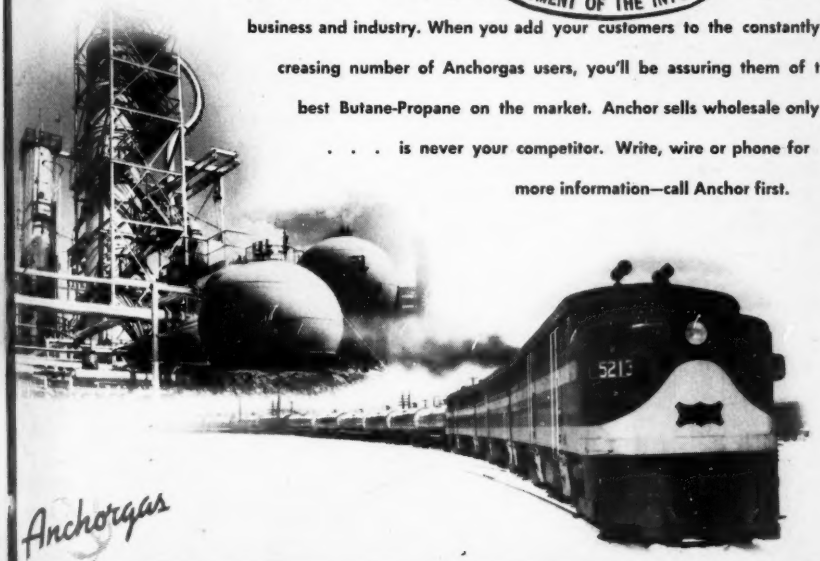

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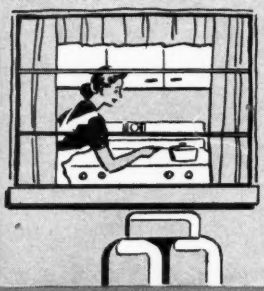

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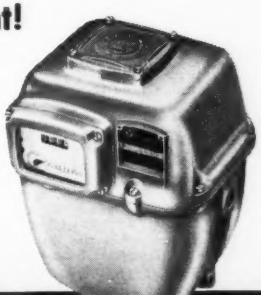

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BUTANE-PROPANE News

APRIL, 1951

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Letters

Gentlemen:

If you have any information on firing brick kilns with propane we would very much appreciate it. We are considering a forced air convection system. Are any such as this in use?

P.M.

Oregon

Both periodic and continuous type brick kilns are being fired with LP-Gas. One company in particular, The Washington Brick and Lime Co., Spokane, Wash., is using butane to fire a 252-foot continuous kiln and nine periodic type kilns.

They are using butane diluted with air to about 1000 Btu per cubic foot on the continuous kiln. The gas is burned through inspiration type burners. Circulating and exhaust fans are used to remove the products of combustion from the kiln. The air for combustion is inspirated by the burners and therefore no fan is supplied.

The periodic or downdraft kilns use natural stack draft to remove the products of combustion and the air for combustion is inspirated by the burners. There are 16 burners on each kiln, all controlled by a single fuel valve. Each burner is provided with a gas valve so that heat distribution can be balanced when necessary.—Ed.

•

Gentlemen:

We are planning to change over our '51 F-6 Ford, 6-cylinder, to propane. Could you tell us what to do for economy and efficiency? We are going to use an Ensign combination gas carburetor.

J.D.G.

Iowa

Since you specify that you will use a combination carburetor, we assume that you will be operating now and then on gasoline. This calls for a compromise setup, as follows:

Install the standard head from the 226 cu. in. Ford passenger car engine, which gives a compression ratio of 7.5:1 on your F6 254 cu. in. engine. When using propane, hold the manifold heat control valve closed with a wire hook to keep the manifold as cool as possible. When it becomes necessary to use gasoline, release the manifold heat control valve, testing it to see that it functions in the normal manner—the shaft should turn freely.

The power and fuel consumption with the above changes should closely approximate your present results with gasoline.

If it is possible for you to operate exclusively on propane, we suggest that you mill the 226-cu. in. head .055 in., which will make the compression ratio a little over 8:1. You should then fit a thin, stainless steel plate between the intake and the exhaust manifolds to prevent the flow of any exhaust gas into the hot box which surrounds the intake manifold. This combination will give a noticeable improvement in both power and economy. The engine may be operated on Ethyl gasoline in emergencies only, with the precaution that the throttle should not be opened far enough to permit the fuel to knock.—Ed.

•

Gentlemen:

I have been trying to figure out the cubic feet of gas flow in high pressure lines. That is, pressure of from 10 to 30 lbs. in pipe sizes up to 3 inch. I have obtained two formulas for figuring this out but they both come out to different answers.

Also, there is another factor that puzzles me as there seems to be two unknown factors in each equation. You are trying to determine the number of cubic feet of flow but you have to know the inlet and outlet pressures. The inlet one is quite simple but I have not been able to find the loss

---

• **BUTANE-PROPANE** *News* **welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed by them.—Editor.**

of pressure per foot in order to determine the outlet pressure.

How many cubic feet of gas will flow through a 2-inch pipe 5000 feet long if the gas is air-mix propane at 1000 Btu per cu. ft. and our line pressure is 30 lbs?

E.C.R.

Alberta, Canada

It is not possible to solve the gas flow equations which you mention with the unknown quantities. The two unknown quantities to which you refer are the quantity of gas to be transmitted and the final pressure or pressure drop through the pipe. You must determine what quantity of fuel is to flow through the line and then calculate the final pressure, or determine the pressure that is required at the delivery point and solve for the quantity of gas that will flow through the line. If the initial and final pressures are known and the quantity of gas which is to be transmitted is also known, the equations can be solved for the size of pipe.

The formula which is generally accepted as expressing more closely than any other the relations of the various elements of the problem is that of Thomas R. Weymouth. If a standard temperature of 520°F absolute and a standard pressure of 14.73 lb. per sq. in. absolute is used, the Weymouth flow formula becomes:

$$Qs = 15{,}302 \sqrt{\frac{d^{5\,1/3}\ (P_1^2 - P_2^2)}{LST_1}}$$

Where Qs = flow, cu. ft. per day under standard conditions.
d = internal dia., inches.
P_1 = initial pressure, lb. per sq. in. absolute.
P_2 = terminal pressure, lb. per sq. in. absolute.
L = length of pipe, miles.
S = specific gravity (air=1).
T_1 = absolute temperature of flowing gas (460°+°F).

For the problem you have set forth in your letter, d=2.067 in.; P_1=30+14.7=44.7 psi absolute; s=1.21; T_1=520°F (60°F) and L=.95 mile. The problem cannot be solved without knowing the value for Qs or P_2. Assume that terminal pressure P_2=20+14.7=34.7 psi gauge. Then

$$Qs = 15{,}302 \sqrt{\frac{(2.067)^{5\,1/3}\ [(44.7)^2 - (34.7)^2]}{.95 \times 1.21 \times 520}}$$

Qs=122,800 cu. ft./day=5100 cu. ft./hr. The above solution is based on standard atmospheric pressure and temperature.—Ed.

Gentlemen:

We have a dealer that installed a boiler having a gross EDR of 1600, with burner input of 300,000 Btu (high altitude rated), a 1000-gallon tank, new 2-stage regulation, consisting of 1" HP line and ¾" LP line, and the total distance from tank is 124 feet (40 feet of HP line).

They are not getting sufficient heat, yet the regulators have been checked, the tank alcoholed, and checked for water.

If you can determine our source of trouble from this information, we will be grateful.

B.I.P.

Montana

Your letter indicates that you have 40 feet between the high pressure regulator and the low pressure regulator and 84 feet from the low pressure regulator to the boiler.

The 1-in. HP line is probably adequate. The low pressure section of line is too small. Is the 84 ft. measured in a straight line from the regulator to the boiler or is it actual length of pipe or tubing with allowance for bends and fittings?

The smallest tube or pipe which could provide the flow required without undue pressure drop is 1-in. Type K or L copper tubing or 1-in. pipe. These sizes would be satisfactory only if the 84 ft. had no bends or fittings in it. We believe 1¼-in. pipe would be more satisfactory.

Also, is your low pressure regulator of sufficient size to handle this large flow with the low inlet pressure delivered by the primary regulator? Consult your regulator manufacturer regarding the proper size to use.

The March, 1950, issue of BUTANE-PROPANE *News* carried an article entitled "How to Figure Pressure Drop in Gas Pipelines," and an LP-Gas pipe sizing table. Both should give you valuable information for correctly sizing gas distribution lines. Additional information can be obtained from our Handbook Butane-Propane Gases.—Ed.

•

Gentlemen:

We would like some information about the best and least expensive way of filling a farmer's propane fuel tank on a tractor from a 500-gallon tank. We have not yet embarked into this field, but have had many inqui-

ries. We have toyed with the idea of using a hand pump, but that adds considerably to the cost of installation. In Delaware, the equipment is not sold but is leased. We feel the cheapest we could sell propane would be $.16 per gallon. Hence, we would like to know if it is practical to fill the farmer's tank by means of gravity?

In your opinion, how long would it take to fill a 30-gallon tank on a farmer's tractor by the gravity method, if you left the bleeder open on his fuel tank while filling?

M.L.

Delaware

The best method of filling a tractor tank by gravity is to elevate the supply tank two to four feet above the tractor tank and use a vapor return line. It is better to use a liquid connection from the bottom of the tank if it is available.

Be sure that all connections are fitted with proper excess flow valves or other safety devices. With this method, it would not be necessary to use the bleeder valve. The tractor tank should fill in only a few minutes. Also, it would make little difference if the tractor tank was warmer and the pressure high; the pressure would quickly equalize with the vapor hose.

With the single liquid hose, the time required to fill a 30-gallon tank will vary with the conditions. If the tractor tank is cool, as in the morning before the tractor is started, the tank would fill rather quickly, but if the tractor has been operating, it will take quite some time. Here again, the relative height of the two tanks will have an effect on the filling rate.—Ed.

•

Gentlemen:

I am trying to secure information on the subject "Proper Tank Sizing." Perhaps you will be able to procure one of your back issues which would contain an article covering the salient points on this very important subject.

S.F.

Minnesota

There are several factors which affect the rate of vaporization in a bulk storage tank, some of which are as follows:

1. Atmospheric temperature.

2. Wetted surface of container which varies as the contents are depleted.

3. Steady or intermittent load.

4. Humidity.

5. Whether the container is shielded or exposed to wind currents and the velocity of the wind if the tank is not shielded. Moving air increases heat transfer rate.

6. Sunlight and shade.

7. Paint condition, thickness and color.

8. Volume of liquid to supply heat for vaporization influences amount of fuel which can be vaporized before pressure drop and cooling is effected.

A high humidity such as you will often encounter in the Minnesota area, reduces the vaporizing capacity. At 80% relative humidity, it only requires about 5°F drop in temperature of the tank contents during cold weather to start the formation of frost on the tank. As soon as frost forms, it has the effect of insulation and the rate of heat transfer to the liquid will be greatly reduced.

A conservative rate of heat transfer from the atmosphere to the liquid contents of the storage tank is 2 Btu per degree F temperature difference between air temperature and liquid propane temperature per square foot of wetted surface per hour.

Because of the many factors which do affect the rate of vaporization of LP-Gas in a storage vessel, it has been difficult to establish accurate figures that can be quoted. However, the rate of 2 Btu given above has been found conservative by most investigators under unfavorable conditions.

Booklet No. 5 of our series entitled "Operating an LP-Gas Business" contains several articles that would be of interest to you.—Ed.

•

Gentlemen:

Can you give me the addresses of some dealers and manufacturers of butane and propane in the U. S. I should like it very much if you will send me some. I would like to come in contact with some of my U. S. colleagues.

H. V. Wynen
Shell Butagas &
Propagas Dealer
Plein 1923
Doorn, Holland

Will those interested in exchanging information with Mr. Wynen address him direct?—Ed.

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A MEMBER

Comment

ARE you making a profit in operating your LP-Gas business? Do you have problems of management, personnel difficulties, operating losses?

Every dealer does. How to foresee and avoid them is often the difference between profit and loss. But where can helpful information be had? There is now starting in BUTANE-PROPANE *News* a series of articles devoted exclusively to this subject—how to start in business and how to stay there.

The basic information every LP-Gas dealer needs to be successful will be printed in successive, monthly issues, written by the author of The Bottled Gas Manual—C. C. Turner. Mr. Turner is an expert at analyzing operational problems—from financing to trouble-shooting. Through long, hard experience in his own company and through studying the operations of other dealers, he has acquired a vast knowledge. This he is going to pass on to readers of BUTANE-PROPANE *News* in the articles starting in April and scheduled to run for many months to come.

You will profit from reading every one of these chapters. The experiences of others are invaluable. Many of these Mr. Turner now makes available in printed form. Read this series and plan for surer, bigger profits ahead!

•

Barring all-out war (now considered unlikely by many "authorities"), 1951 will not be such a bad year, business-wise, after all.

Admittedly, LP-Gas dealers can sell appliances if they can get them, and it looks like they would get more in '51 than ever before—except in 1950 and 1947. At least, the Gas Appliance Manufacturers Assn. says so after its early winter survey of manufacturers.

Appliance makers, weighing government orders, material restrictions, and defense controls, say they think production can reach 75% of 1950 totals. In actual figures, this means approximately 2,325,000 ranges and 1,725,000 water heaters.

Remembering that the LP-Gas branch of the industry accounts roughly for some 25% of the whole, it doesn't look much like dealers would have to close up shop. In fact, with such an expected appliance production, plus plenty of fuel to sell, plus new agricultural and commercial sales to be had almost for the asking, it is not impossible that 1951 may be the best year yet in the remarkable growth of this industry.

•

Eighteen months from now (according to Fred A. Rives, advisory committee chairman of the Southern Technical Institute) young men capable of stepping into different departments of the liquefied petroleum gas business, whether it be in the service or sales department or manager of a branch office, will be in great demand under the present domestic program.

That is why the Gas Fuel Technology course at Chamblee stands in such high favor with the industry.

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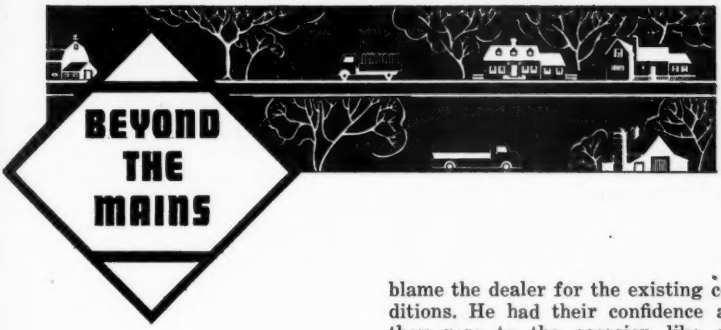


ALL sound business is enhanced by good customer relations.

If a dealer has established confidence in himself and his employes by his policies with his customers, he not only builds community good will and future sales, but if he gets in trouble he will have cooperation from those he serves.

By "trouble," reference is made specifically to such a circumstance as a shortage of fuel. This situation occurred in many sections this past winter because of the tank car shortage and the switchmen's strike. If it happened to you, how did you appease your customers?

Farther along in this issue you will read what one dealer did. He frankly took all of his customers into his confidence. He told them fuel was short. He asked them not to order fuel unless they were out. He promised to equitably divide new shipments as they were received, serving the most needy cases first.

What happened? He got remarkable results, a cheerful cooperation that enabled the dealer to pull through the period of shortage with almost no hardship on his users.

The important point is that the customers didn't get sore and didn't blame the dealer for the existing conditions. He had their confidence and they rose to the occasion like any good Americans will do when they are dealt with fairly and understand why sacrifice or cooperation is needed.

•

Nothing has ever hit the LP-Gas industry with the impact that has resulted from the sudden upsurge in the use of propane for internal combustion engines.

First, in 1950 came the unparalleled demand for conversion of gasoline tractors, totaling an estimated 100,000 in number, and followed closely by the order of the Chicago Transit Authority for 500 new propane passenger buses. Numerous other cities placed orders for lesser numbers but indicating an unmistakable and momentous trend to this class of installation.

The field this has opened to the industry is tremendous. Huge quantities of fuel are needed; large, new bulk plants have been installed or are on order; manufacturers of equipment are far behind in production due to the demand for carburetors, fuel tanks, manifolds, etc.

There are two angles of particular interest to the average dealer. Bus and taxicab systems in small towns are logical prospects for conversions to propane from the fuels presently used and can be sold not only the conversion equipment but fuel contracts that will extend indefinitely into the

future. Tractor installations are possible everywhere, and there, again, is a profit on first sales and on large, future fuel volume.

The second point of vital concern is the fact that the tractor load comes in the so-called off-season—the summer when domestic use drops lower than in the winter and throws off balance the year-round consumption.

With producers demanding that dealers do something immediately to establish a better ratio of fuel use on a summer-winter basis, tractor fuel use comes as the salvation of the situation. In many an instance it will more than balance the quantity of butane and propane used in the cold months when heating applications raise the gallonage.

•

A sidelight on the furor caused by increased engine demand is that speakers at conventions and other gatherings inevitably get into the subject in a big way.

Regardless of the paper's title, the author is almost sure to converge on this angle of demand for it so positively and so directly ties into the progress of the industry at this time.

So, if you see a headline about service, or bookkeeping, or sales, or safety, or any other subject, don't be surprised if its conclusion is based upon what can happen to your business (favorably) if you will just get out and sell tractor fuel.

•

Clyde Latchem, Kansas state fire marshal, gives an important warning to industrymen who sell farmers bulk fuel. These farmers, using propane in their tractors, make liquid transfers from their bulk tanks into the tractor fuel tank.

This is a routine procedure to which no hazard attaches when an experienced dealer performs the operation. And it need not constitute a risk on the farmer's part providing he is taught how to make the transfer in a safe manner.

So it becomes the obligation of the dealer supplying fuel to the farmer to impress upon him every last detail of safe practice and complete information upon the characteristics of the fuel.

Individual users of all fuels are inclined to be or become careless when performing any given operation over and over again, especially if there are factors involved which vary from common practices.

Accidents on the farm from filling tractor tanks due to either carelessness or ignorance would react very unfavorably upon the development of this new load. They should not be allowed to happen and if dealers will give farmers proper instructions, and check upon their practices from time to time, the incidence of trouble will be minimized.

•

The service schools which are being held annually in several sections of the country are making a fine contribution to safety within the LP-Gas industry. In teaching proper methods of installing and servicing equipment and appliances, the schools are putting the best possible emphasis on safety, for when installations are made correctly, they are safe.

It is news worthy that applications for attendance at these schools invariably exceed facilities, showing that dealers who send their men there and attend, themselves, recognize the importance of the courses.

Great credit is due to the Liquefied Petroleum Gas Assn. for promoting and conducting these service schools. The final objective should be to have one in every state at least once every year.

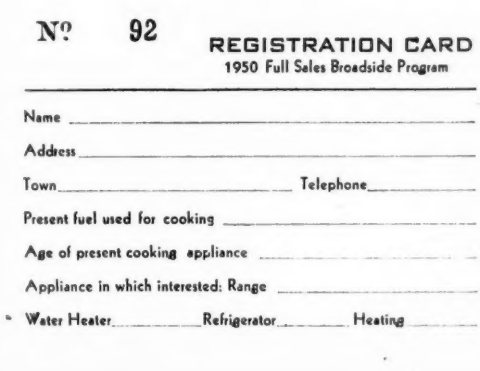
A "Friendly Service" Plan That Pays Its Way

By Hilda Galloway

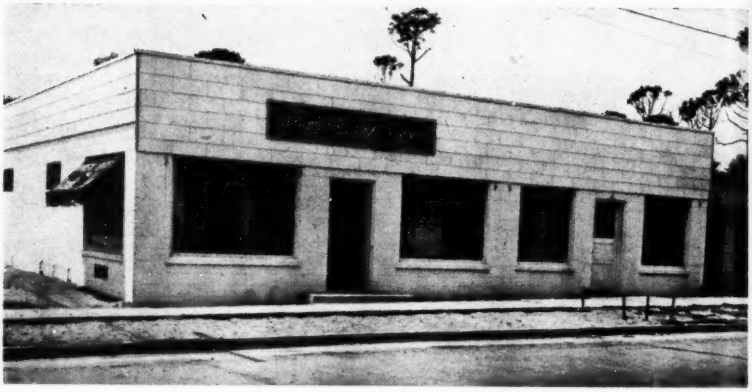
FOUR years ago W. R. Collingshead set up a showroom in the small Florida Gulf Coast town of St. Andrew. Noting the general dissatisfaction with service and repair work in the territory, he began business with a no-charge policy for all types of service work, regardless of the man-hours required to do each job. To this policy Mr. Collingshead attributes his growing route list of 600 customers.

The backbone of the Domestic Utilities' policy is its service reserve fund. This reserve is accumulated by adding $5 to the price of each appliance sold. This sum is then automatically transferred to a customer reserve account guaranteeing "free service" for all adjustments and repairs needed during the life of the appliance. Similarly, when a new bottle hookup is made, $5 is again added to the cost of the installation to cover service.

The firm has found that it rarely need explain this charge to the customer. The sum may vary with



The registration card used by Domestic Utilities at cooking demonstration range drawing.



Domestic Utilities appliance showroom in St. Andrew, Fla.

the amount of the sale but averages $5 per appliance or bottle installation. Thus far the reserve fund has proved more than adequate to meet the cost of all service calls, even when the "stop" is at a distance of 65 miles.

Customers Spread Good Will

Needless to say, Domestic Utilities' customers are highly enthusiastic and their good will spreads to newcomers in Panama City, St. Andrew, Millville, and nearby townships. Free service is the big advertising plug in the company's promotion effort.

"Only once in a great while does a customer attempt to abuse our service plan," Mr. Collingshead said. "In such instances, we have found it necessary to 'sit down' on them. For the most part, however, customers appreciate the service as a real favor, and will cooperate with us in any way requested."

It has required good management to insure that the $5 per unit charge would cover all operating costs. All service calls are scheduled on gas deliveries, which means that the customer may wait a maximum of two or three days for his service work. For definite emergencies the company schedules a light pickup truck to do the job.

News of the free service plan draws a lot of traffic into the Domestic Utilities showroom. Here, the Florida dealer shows a large line of well known gas appliances in an orderly display line-up. Time-payment plans fit the sporadic incomes of local residents. About 25% of the yearly appliance and heating equipment volume is sold on the showroom floor; the remainder, by two expert outside salesmen, following leads which

Mr. Collingshead develops in many ways.

In cooperation with a huge supermarket, open 24 hours a day, also located in St. Andrew, Mr. Collingshead ran a range "giveaway." In a month's time the event collected more than 10,000 names, most of the list consisting either of permanent residents, or people who spend their summers along the Florida beaches, and were, therefore, worth while prospects.

Mr. Collingshead is a strong believer in "cooking schools" and has run several during the 4-year life of the firm. One of the most effective was a 3-day run in the local school auditorium, in cooperation with the Parent-Teacher Assn. and the county agent. A home economist cooked a huge variety of foods, which were served to 900 women over the 3-day period. On the last day, the range used for the cooking demonstration was auctioned off and financed for the winner. This promotion was the center of attraction for several weeks in the small Florida community.

Company "Plays" the Fairs

In addition, the company prepares many "floating exhibits" for local fairs, bazaars, and other events attracting the local population. At its Wewahitchka county fair exhibit, last year, thousands of biscuits were served piping hot with butter and honey. It sponsors a 3-minute, technicolor "trailer" in all local theatres, demonstrating the versatility of LP-Gas for heating, cooking, refrigeration, etc., witnessed by some 15,000 moviegoers weekly. Domestic Utilities has always been a believer in "radio saturation," running 20 to 30 radio spots per day on three stations, noting the nationally-known appliance lines carried by the store, and inviting the public to telephone in.

Promotion Builds Appliance Volume

The result of this type of promotion, in combination with the strong merchandising tool of "free service," has been an appliance volume which would do credit to an LP-Gas organization five times its size. Fifty per cent of their total sales volume is in appliances. Domestic Utilities has recently purchased three new trucks, in blue and gray, including two lightweight pickups, for high-speed bottle delivery, and a 2½-ton monster, which shuttles between the Domestic Utilities warehouse and the bulk plants from which the company's butane and propane fuel is obtained.

Associated with Mr. Collingshead in the company are Mrs. Collingshead and L. E. Wilheit. It took vision to settle in this tourist wonderland with its beautiful sea coast beaches, fresh and salt water fishing. The pay-off was rapid. The territory's population more than quadrupled in four years with more than 85% of new-home owners depending on LP-Gas for heat, cooking, and refrigeration.

BEGINNING THIS MONTH

B-P NEWS PRESENTS IN SERIAL FORM A BASIC AND CRITICAL ANALYSIS OF THE PROBLEMS OF MANAGEMENT

AN OUTLINE OF CHAPTERS FOR SUCCEEDING MONTHS

1. Are You Qualified?
2. Capital Necessary for Success
3. Suggestions for Raising Capital
4. The Relation of Appliance Sales to the Gas Business
5. Selecting a Location
6. Competitive Fuel Appliances
7. Selecting an Appliance Line
8. Establishing Competitive Prices
9. Flat vs Progressive Pricing
10. Bulk Pricing
11. Ethics
12. Trade Assns.—Good Points and Bad
13. Incentives for Your Salesmen
14. Getting the Most From Your Advertising Dollar
15. Ad Copy: Facts vs. Generalities
16. Luxuries That May Swamp a Business
17. Cutting Delivery Costs
18. Selecting Competent Employes
19. Controlling Service Costs
20. Making Collections and Keeping Friends
21. Pitfalls of "Keeping Up with the Joneses"
22. System and Too Much System
23. Buying Profitably and Wisely
24. Planning a Life-Time Income
25. Bulk or Packaged Service?

THIS IS A NEW APPROACH. Nothing like it has ever been published. The early chapters will be nostalgic to many dealers as they recall their own doubts at the time of their first LP-Gas venture—for Mr. Turner begins his study with the questions:

Am I qualified to start?
Can I make a profit and stay in business?

You may wish to clip each chapter from current issues. The bound pages will comprise an effective managerial textbook for old and new hands in the industry. Good reading!

ABOUT THE AUTHOR

C. C. Turner needs no introduction to the industry. Author of The Bottled Gas Manual, he has been a steady contributor to BUTANE-PROPANE News. His ability to analyze managerial problems is derived from long study of dealer operations and from his own success in the industry. Mr. Turner constantly reveals new sales goals, cites facts, draws Turneresque conclusions. It is this faculty that makes Mr. Turner's editorial efforts of particular value. As you read, you unfailingly profit along the way.

PRACTICAL MANAGEMENT

OF AN LP-GAS BUSINESS

CHAPTER 1

Are You Qualified?

THERE is much more to the gas business than buying a product and re-selling it at a profit. The gas business isn't a royal road to riches and it isn't one that you can operate entirely as you see fit without regard to the rights and opinions of others.

I know of no other business in which one can find a greater opportunity for the expression of so many talents. No two days in the gas business are the same. One applies a knowledge of salesmanship, financing, banking, engineering, purchasing, advertising, rate equalizations, adjustments, personnel, law regulatory bodies, and trade associations. It is impossible for any man to have expert knowledge of all of these fields but he can acquire a general knowledge of them. His worth is not so much in the things that he knows as in his ability to utilize the available sources of information pertaining to his problems.

We of the liquefied petroleum gas industry are not protected by franchises which allow us the exclusive use of public property and which compel the public to do business with us, so we can't afford to cultivate a "take-it-or-leave-it" way of doing business.

This business of ours has enjoyed its phenomenal growth because of hard work, better service, a superior product and knowing how to apply that product more efficiently than competitive fuels to the benefit of mankind. I mean

There is the prospect of a comfortable and reasonably sure income on the sunset side of life.

hard work, for I know of no other business in which one can work harder and tie up so much of his reward for labor in an investment in the future.

This is an expanding business which must continue to grow indefinitely or it will die. To offset this there is the prospect of a comfortable and reasonably sure income on the sunset side of life, but one cannot take it for granted that this is assured. You can make a failure of the gas business if you rush into it without any knowledge of it. You can lose if you haven't sound business judgment, and you can be painfully spanked by your competitors if you think that you can ride over them with impunity.

I have emphasized better service, so other than the ability to learn and the willingness to work, your first qualification must be that of being a good servant. As a gas man you are a public servant privileged to furnish your neighbors and friends with an essential service. Serving others may at times be a thankless task and customers can be unreasonable in their demands.

Have you the tact and patience to get along with such people? Can you graciously forego your bridge game, your dinner, or evening at the club because Mrs. Housewife has forgotten to order gas and asks you to deliver it to her after hours? If not, you had better give up all thought of the gas business

now, for you will never make a success of it.

Are you a salesman? I am not referring to the run-of-the-mine kind that can sell washing machines, radios, refrigerators, heaters and ranges, for you must sell much more than material things. You must be able to sell the intangibles such as service, rate structures, good will, and quality. Giving away your merchandise, your services, for less than a fair price isn't salesmanship.

It Takes True Vision

Are you the possessor of vision, but not visionary? There is a great difference. The gas man of vision believes in the gas business, its future, and plans for it. Immediate profits are quite often insignificant in comparison to those which may be reaped later by developing a particular gas market of promise.

This business is in its infancy. We are but toying with the heating load. There is a tremendous virgin territory at hand in motive power applications. We are far from the saturation point in domestic cooking and we haven't even scratched the surface in water heating and refrigeration.

Development of these fields requires venture capital which must come out of the immediate profits of your business. You must plow back into your business a substantial portion of your profits for expansion purposes. Have you the vision to do this?

Can you cooperate with others in the gas business? You may look upon them as competitors but your real competitor is the gigantic electric combine, and it is out with the avowed intention to run the liquefied petroleum gas business off the map. It is being aided in this purpose by a paternalistic government which has lavishly subsidized it. It is attempting to throttle our activities through restrictive legislation fostered by well paid lobbies.

Franchises keep the electric boys from fighting among themselves at the customer level. They are united in their attacks upon us and are spending millions of dollars in a

We haven't even scratched the surface.

common advertising campaign against us.

This doesn't worry me in the least providing that we of the liquefied petroleum gas business do not start fighting among ourselves. To do this would be playing into the hands of the power interests. As independent gas operators we are pitifully helpless against the electric onslaught, but united we are formidable antagonists. We must unite or die. Why weaken ourselves by fighting among ourselves?

What can you hope to gain by stealing your fellow gas man's customers? You have no price advantage that he cannot equal if he chooses to do so. He can give away services just as well as you. He is quite as able to steal your customers. If people don't like him it is quite likely that some of them may not like you. The way this kind of competition within an industry ends up is in cutting prices to the point where no one makes any money in it and the advantage to the customer is but temporary.

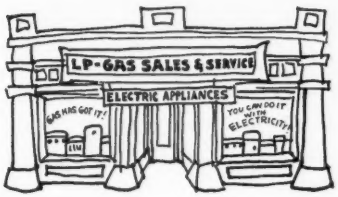
Good service is dependent upon fair profits, and when they disappear good service suffers. You must give even better service than the electric companies do if you are to hold the business that you acquire, and don't miss the fact that they do give good service.

Do you sincerely believe that gas does a better cooking job, that gas refrigeration is better than electric refrigeration, that gas water heaters are faster and more dependable, that gas space heating can be economical and that it offers the ultimate in satisfaction?

I've known many so-called gas men who were not sincere believers in the gas business or the products they have had to sell. They have even had electric ranges, electric water heaters and electric refrigerators in their homes. If you do not use the products and the service which you represent you are as inconsistent as the doctor who will not take his own medicine, and people will not believe in you. People haven't believed in these so-called gas men that I have known,

United we are formidable

We already have too many people with us whose only interest is picking up an easy dollar.



and they haven't been successful in the gas business.

If you do not sincerely believe in gas, if you do not use it yourself, then the gas business doesn't need and doesn't want you. We already have too many people associated with us whose only interest is in picking up an easy dollar. They are the type that will sell an electric appliance if the sales resistance is less, regardless of the best interests of the buyer. In so doing they are selling out the gas business to its competitor, electricity.

Need Mechanical Aptitudes

Are you mechanically inclined? If you start in a small way, as most gas businesses do, you will have need of some mechanical aptitude in order to make gas installations, install safety pilots, adjust gas flames and calibrate thermostats. If you start in a larger way you should, as an employer, have the ability to understand what your employes are talking about when they run into mechanical difficulties. Furthermore, in the purchasing of appliances for your customers the ability to discern errors in design and flaws in workmanship will be of great financial advantage to you.

There are manufacturers who try to hide shoddy merchandise under flashy chromium trim. The fundamental value of a range starts with the frame, on which its many parts are assembled. This is hidden from view and it can be the cause of much woe to you. My first requirement of an appliance is that it shall have AGA approval as a starting point from which I go on to evaluate it.

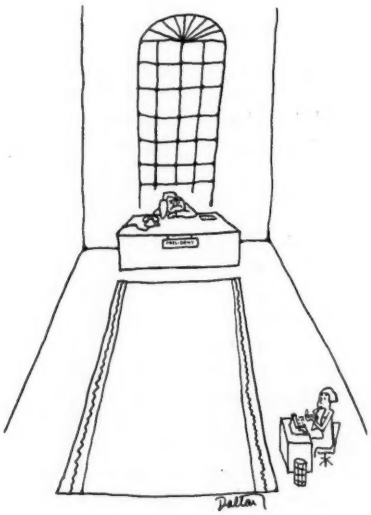
Have you the moral fiber to turn down a prospective sale if you do not think that the service to be rendered to the customer will be to his advantage? Perhaps some of the evils which I charge to lack of moral fiber might better be charged to slothfulness, which, when the customer's well-being is concerned, amounts to the same thing.

In one particular field the liquefied petroleum gas business is needlessly suffering from ill-advised sales, and that is the space heating field. Gas heating of homes, offices and stores can be a not-to-be-surpassed comfort, economical and of benefit to the user if it is properly sold and installed under suitable circumstances.

Far too often the merchandiser is tempted to sell a heater that he knows is large enough to do the job without taking the trouble to find out whether or not it is too large for the job. Others yield to the temptation to sell what they actually have on hand without regard to its suitability. No one type of heating is applicable to all jobs.

Can you pass up a heating job if the building is not properly insulated? Can you refuse to take on a water heating job if the customer refuses to eliminate leaks or a piping system that literally exudes precious heating units for no useful purpose? The immediate profits to be gained from a sale which should not have been made are small recompense for the ensuing headaches or the damage that it does to your business and the gas business as a whole.

Let's summarize the fundamental qualifications which I feel you should have if you are to be a success in the gas business.



You can have the gold of Midas and still be a failure

QUALITIES NEEDED FOR SUCCESS IN THE GAS BUSINESS

1. **Regard for the rights and opinions of others.**
2. **A desire to be of service to others.**
3. **A general knowledge of many business subjects.**
4. **Willingness to be a public servant.**
5. **Sound business judgment.**
6. **Ability to learn.**
7. **Willingness to work.**
8. **Tactfulness.**
9. **Ability to sell intangibles.**
10. **The vision to grasp and develop opportunities.**
11. **Ability to cooperate within the industry.**
12. **Sincere belief in the gas business.**
13. **Willingness to use your own products.**
14. **Mechanical ability.**
15. **Moral fiber.**

Another one should be added, and that is the ability to take a loss or make an adjustment with a smile, for no other good reason than that it's the right thing to do!

Note that I haven't once mentioned the amount of money that you have behind you. Money is essential in this business, but you could have the gold of Midas and still be a failure in it. The intangible assets which you possess are more important than money to a successful business.

Chapter 2 Next Month: "Appliance Sales"

Servicing Thermostats in the Field

By M. B. GAULT
Field Representative, Robertshaw Thermostat Division, Robertshaw-Fulton Controls Co., Youngwood, Pa.

In Four Parts. Part 2 — Water Heaters. Lighting Procedure - Adjustment - Testing.

IN our discussion of thermostats, it is our intention to cover their use on water heaters, ranges, space heaters and commercial appliances. It is not possible to describe the many different types of controls which may be found on these appliances. Rather, we will choose a thermostat, which is representative of its particular type, and present it to you as thoroughly as possible.

We remind you again that "gas thermostats are simple." It is also true that they are similar. While we will confine ourselves to one control in each field, most of the information can be applied to other controls as well.

The various manufacturers of controls have their own ideas as to how they can best achieve the desired result. These ideas are built into their product. In this respect, thermostats are different. Since the desired result (automatic control of temperature) is the same, servicing them becomes a standard procedure, more or less. In this respect, thermostats are similar.

Let us be specific now, and consider a control which is representative of its type in the water heating field — the Robertshaw - Grayson "Unitrol." It is known as a "universal" control because it is a combination thermostat, gascock and safety pilot, and may be used on all gases.

Before continuing, I would like to stress one point: A control of this type is not complex; it is not difficult to understand; it is not hard to service. We all remember the days before such a control was available. Then, we achieved the same result by using three separate controls. A manual shutoff valve, a thermostat and a safety pilot were installed in the gas line —one down-stream from the other. If any one of these controls was causing trouble, we corrected the fault on the one and paid no attention to the other two. The same thing is true of the "universal" control. While these three basic controls are part of one unit, nevertheless there is a definite division

between them. And we can say again that if one of the basic parts of the control is causing trouble, simply confine your attention to it.

This is not to say that, after completing your repair, you can walk away from the job. Good service practice demands that the entire

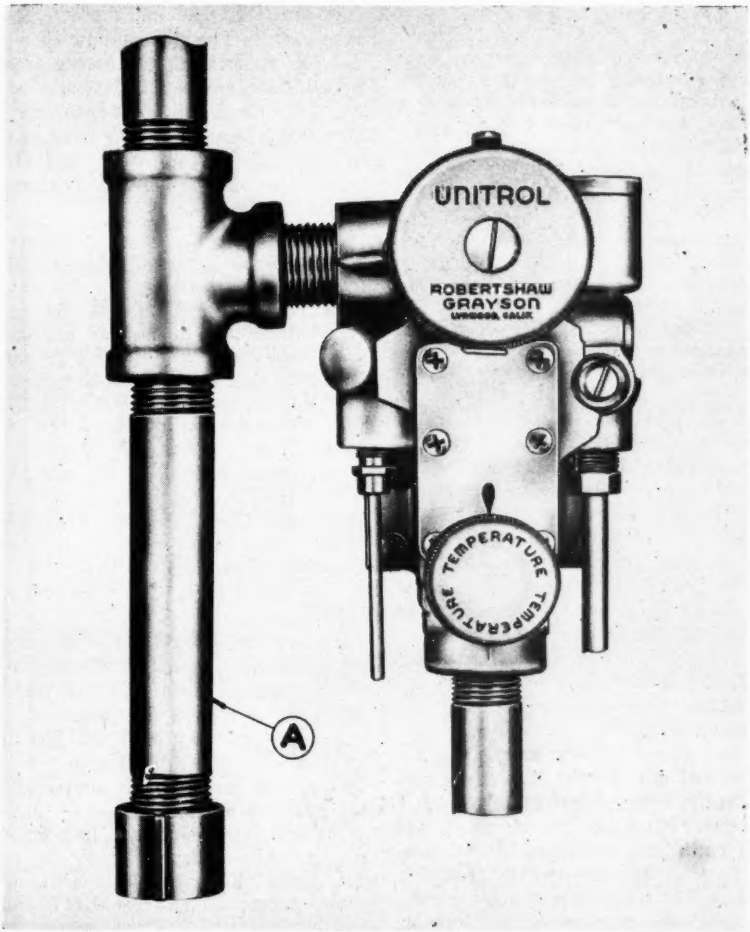


Fig. 13

control be checked after performing a service operation on one of its parts.

There are certain fundamentals which should be followed when installing a domestic water heater.

1. Use only clean pipe. It should be remembered that dirt or pipe scale will eventually find its way to the thermostat and prevent proper closing of the main valve disc.

2. Wherever possible, it is good practice to install a sediment trap ahead of the thermostat, as pictured in Fig. 13.

3. When the piping has been completed, check the system for leaks. Naturally, you will use a soap solution (never an open flame) to discover the point of leakage, if your manometer indicates that the system is not tight.

There is a definite procedure to follow when lighting an appliance equipped with the modern water heater control. Usually, the instructions for lighting are attached to each water heater.

At the time of installation, the pilot and main burner flame must be adjusted. In the case of the Unitrol, please refer to Fig. 14.

The height of the pilot flame should be adjusted so that it envelops about $\frac{3}{8}$" to $\frac{1}{2}$" of the thermocouple tip (14). This adjustment is made by removing Pilot Adjustment Screw Cap (4) and turning Pilot Adjusting Screw (5) counter-clockwise to increase size of flame and clockwise to decrease. If an air shutter (6) is provided, as in Fig. 14A, adjust until a soft, blue flame appears on pilot burner.

Proper adjustment must also be made of the primary air in relation to the flow of gas to the main burner. This adjustment (air shutter) is normally provided by the water heater manufacturer.

In some instances, the installer may find that the main burner is over-gassed. The Robertshaw-Grayson Unitrol has an interesting feature in this respect. It is equipped with a "Flo-Limiter" which may be used to restrict the flow of gas to the main burner. The adjustment is permanent and can be made as follows:

1. Rotate Gas Cock Dial (1) slowly toward "Pilot" position, until desired main burner flame height is obtained.

2. Loosen (do not remove) Phillips Head Screw (7) in the rim of Gas Cock Dial.

3. Hold Gas Cock Dial (1) to prevent it from turning and slide "ON" tab (8) clockwise until it strikes a stop and rests under Pointer (2).

4. Tighten Screw (7) in rim of Gas Cock Dial (1).

5. Turn Gas Cock Dial (1) to "Pilot" and back to "ON" several times, to see that desired flame height is maintained each time it is turned to "ON."

The control should arrive in perfect working condition but, sometimes, damage does occur in handling and shipping. To insure customer satisfaction and to guard against service call-backs, the control should be checked completely at the time of installation — and after any service repair. This routine could be followed:

1. After the control has been placed in operation, as described in the lighting instructions, check for proper functioning of the main valve by turn-

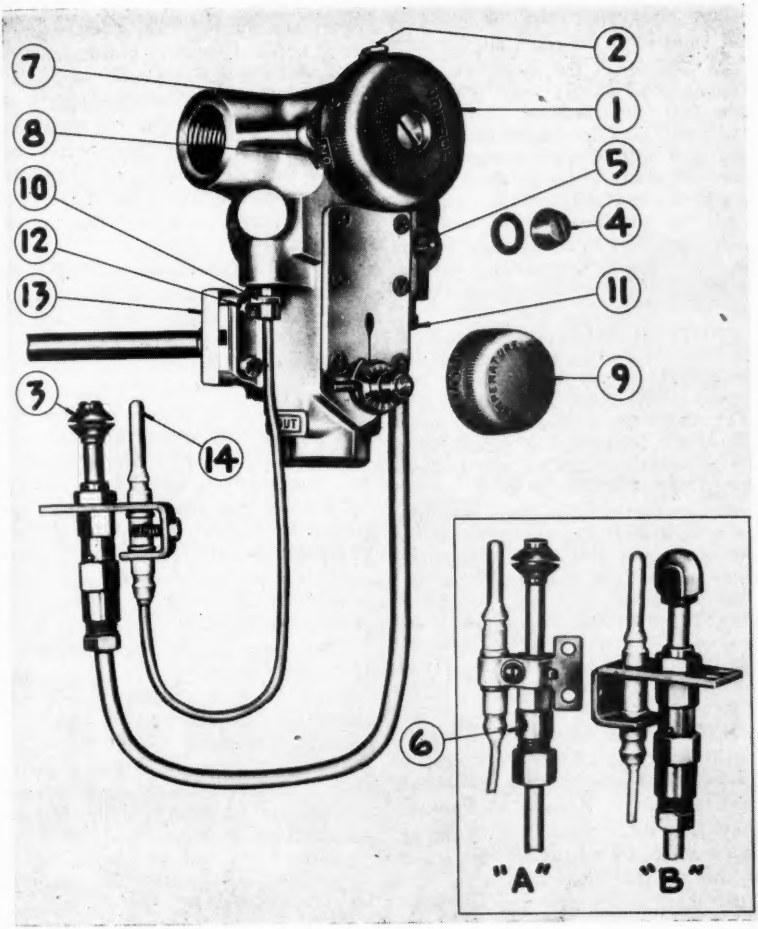


Fig. 14

ing the Temperature Dial (9) **slowly** back and forth (from minimum to maximum temperature setting) several times. Control should snap positively! That is, gas to the main burner should be instantly and completely shut off when the control is snapped "OFF." When the control is snapped

"ON," a full flow of gas should pass immediately to the main burner.

2. Next, check the operation of the automatic pilot. First, turn Temperature Dial (9) to highest setting. Second, turn Gas Cock Dial (1) to "OFF" and wait until magnet releases. (The snap of the magnet is audible and can be heard plainly). Then, turn Gas Cock Dial (1) back to "ON"—and no gas should flow to **either** main burner or pilot burner. For positive results, check at orifice for complete main burner shutoff.

(NOTE: If control does not shut off, as shown by testing at the main burner orifice, it may be that dirt has lodged on the valve disc face or valve seat. The control should be cleaned [described later in this article] and then retested. If control still fails to meet this test, replace it!)

3. Finally, show the appliance owner how to place his automatic water heater in operation by following the steps in the lighting instructions. Explain the purpose of the control and the ease with which he can obtain the desired temperature. Very often, you can avoid return service calls by following this procedure.

Probably the most common complaint involving any pilot-generated control is that the pilot will not remain lighted. Using the Robertshaw Grayson Unitrol in Fig. 15 as an example, let us investigate some of the possible causes.

First of all, it is necessary that we have a clear understanding of how a thermocouple does its job. The thermocouple is composed of two dissimilar metals which are joined (welded) together at one end. Copper lead wires are attached to their free ends. When heat is applied to the junction point of the two dissimilar metals, a small current of electricity is generated because of the difference in temperature between the hot junction and the cold junction. The hot junction is the point where the two metals are joined together, and the cold junction is the free ends of the two metals where the copper lead wires are attached.

It is always recommended that the pilot flame impinge directly on the thermocouple tip in the area of (3) as shown in Fig. 15. This is the hot junction. The cold junction is approximately 1½" below the tip. Since it is the *difference* in temperature between the hot and cold junction which creates the electric current, you can see why it is important that the pilot flame impinge on the last ⅜" to ½" of the thermocouple tip. This electric current is then carried by the lead wires (15) to the body, where the magnet is located.

Returning to the reasons why the pilot flame will not remain lighted, here are some points to check:

1. The pilot flame should be of good size; it should impinge directly on, and envelop, the thermocouple tip. If you are unable to get a pilot flame of sufficient size after backing out the screw under cap (4), clean the pilot orifice and primary air openings.

2. The pilot should burn with a steady, soft, blue flame. If the pilot is equipped with an air-shutter, as in Fig. 15B, it must be adjusted to give these characteristics. A method to follow is to reduce the amount of primary air until a yellow tip appears on the pilot flame. Then, gradually increase the primary air until the

yellow tip just disappears. Stop! That's it!

3. Be certain the thermocouple has not slipped out of place in its holding bracket.

4. The thermocouple tip which makes contact in the body of the control may be dirty. Loosen nut (14) and remove thermocouple tip from body and clean. You might use the eraser of your lead pencil to clean the tip. It is slightly abrasive and does a good job.

5. The thermocouple nut (14) may have vibrated loose. Tighten it about ¼ turn past the finger-tight point.

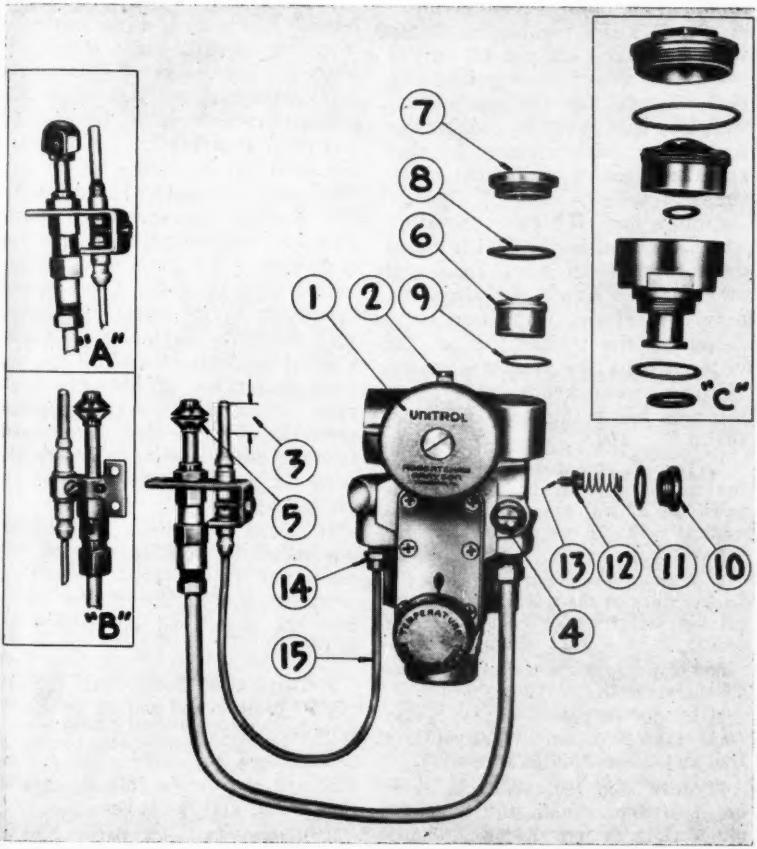


Fig. 15

6. The thermocouple lead wires (15) may be kinked, causing them to short-circuit. The thermocouple must be replaced.

7. Finally, if none of the above helps you, it may indicate a defective magnet and the control should be replaced.

At this point, I would like to stress the advantage of using a combination milli-volt and milli-amp meter in trouble shooting. With such a test kit, you are able to check not only the output of the thermocouple but the magnet, as well. The time saved in locating the source of trouble will pay for this valuable piece of equipment many times over.

Calibration is one operation which the man in the field is called upon to perform more than any other. It is a simple operation and easy to perform. First, you must determine the temperature of the water. Unless the appliance manufacturer recommends differently, you may follow this procedure (refer to Fig. 16):

1. Turn Temperature Dial (1) until the control just snaps "ON." Wait until the control snaps "OFF" automatically due to the rise in temperature of the water.

2. With a thermometer, measure the temperature of the water at the nearest hot water outlet (not the drain cock).

3. Compare this reading with the Temperature Dial setting.

4. If the difference is too great (more than 10°), pull off Temperature Dial and loosen Phillips Screw (2).

5. Move stop (3), which is graduated in approximate 10° intervals, either right or left the proper number of graduations. For example: If the thermometer reading is 150° and the Temperature Dial setting is 120°, then stop (3) should be moved clockwise, three graduations. CAUTION! Do not move screw (4) while adjusting stop (3).

6. Tighten Phillips Screw (2), replace Temperature Dial and check calibration.

After a period of service, it may become necessary in some instances to renew the grease on the gas cock plug. An indication of this would be that the gas cock dial turns with difficulty. Again refer to Fig. 16 and after shutting off gas at nearest hand valve, remove screw (5) with gas cock dial (6) and spring (7). Remove two screws (9) with plate (8) and spring (10). The gas cock plug (11) may now be removed from the body. Clean it and the body cavity with a solvent, such as carbon tetrachloride. Apply a *light* coating of grease to the tapered surface of the gas cock plug. CAUTION: The grease should be of a type that is approved for use with LP-Gas. Reassemble parts in reverse order, and check for leakage.

It is not uncommon for dirt or pipe scale to find its way to the main gas valve (19), preventing complete shutoff. Then, the valve disc and seat must be cleaned as follows:

1. Turn Gas Cock Dial (6) to "OFF" position and pull off Temperature Dial (1).

2. Remove six cover plate screws (12) and cover plate (13). Be careful that gasket (14) is not damaged.

3. Remove two Set Lever Screws (15) and Set Lever (16). If adjusting

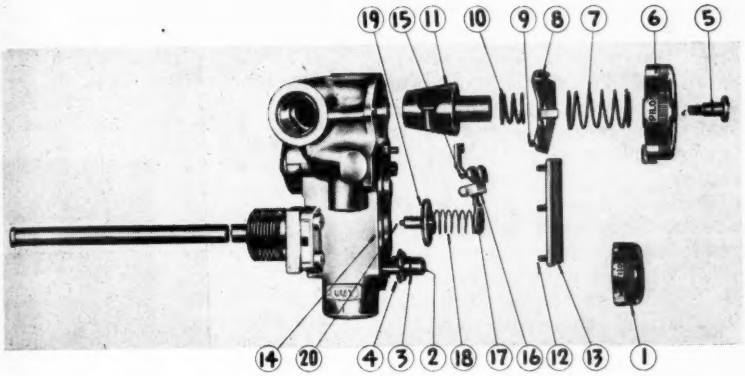


Fig. 16

screw (17) is provided, DO NOT DISTURB ITS ADJUSTMENT.

4. Remove valve spring (18) and valve disc (19). Clean face of valve disc (19) and valve seat with a soft brush or chamois. Do not attempt any adjustment of screw (20) in the end of valve stem. It is a micrometer setting and must be made with special, precision measuring devices.

5. Reassemble parts in reverse order. Be sure valve spring (18) is properly seated around boss on back of valve disc (19).

6. It is important that the control be thoroughly checked for proper functioning after such cleaning and assembly operations. This includes a check on the 100% automatic shutoff feature. Remember, that in the event of pilot failure, all gas to both main burner and pilot burner must be shut off completely. This is mandatory in LP-Gas installations.

Under the heading of "General Information," we would like to draw your attention to several points concerning the control we are discussing. Notice that the valve disc (Item 19 in Fig. 16) serves two purposes. It constantly moves to and from the seat and controls the flow of gas to the main burner under changes in water temperature. In the event of pilot failure, the set lever (16) is caused to pivot by the magnet and, in pivoting, force the valve disc (19) closed. This is an advantage, since this "working" valve disc serves to keep itself clean and, being clean, automatic shutoff is assured upon pilot failure.

If it becomes necessary to replace the control, the tank need not be drained. Simply disconnect pipe connections, pilot tubing nut (11) and thermocouple nut (10), as shown in Fig. 14. Remove four

All drawings by Robertshaw-Fulton Controls Co., Youngwood, Pa.

screws (12) and separate body from the shank of immersion element. Assemble replacement body, using the old Temperature Dial (9). Recalibrate, if your check shows too great a difference between water temperature and dial setting.

For best results, it is usually wise to recommend that the consumer operate his water heater at 140°—but not higher. The exception, of course, is in commercial installations where the user may be compelled by law to use 180° water.

Where Trouble May Lie

Because of space limitations, we must assume that you appreciate the importance of proper venting, pipe sizing and gas pressure. Controls are often blamed for improper functioning when, actually, the cause lies somewhere else. Poor venting will smother the pilot flame, and eventually the main burner. Undersized pipe can reduce the gas pressure to the point of causing pilot failure. Too high a gas pressure will cause the main valve disc to close and not open.

We remind you, then, that in your field work, first be certain that the thermostat complaint is not caused by some other fault in the installation. If the trouble does lie in the thermostat, it can usually be corrected quickly, easily and simply.

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Part 3 will discuss space heating controls.

AGA Researchers Meet In Berkeley, Calif., April 26-27

The 1951 Pacific Coast Research Conference will be held in Berkeley, Calif., April 26-27 in the Claremont hotel. The conference will be coordinated with The Customers Service Conference of Pacific Coast Gas Assn., which will be held in Berkeley, April 25-26. Devoted to all phases of research and development in the utilization field, the conference will cover both technical and practical phases of AGA PAR Plan research.

GUY CORFIELD

Men from AGA Laboratories, Purdue University, and other institutions that are engaged in this program, which has over 20 active projects, will give first-hand information on what is being done and what the progress being made means, and how it can be interpreted and put to best use.

Latest developments and thinking concerning venting, ignition, and combustion (V I C), the all-important factors that form the key to every basic advance in gas appliances, will be thoroughly explored and explained by capable men. Discussions and question and answer periods will be featured.

Guy Corfield, research engineer of Southern California Gas Co., is chairman of the conference, which is being sponsored by the AGA Committee on Domestic Gas Research, R. J. Rutherford, Worcester (Mass.) Gas Light Co., chairman.

Teach the Farm User To Handle Fuel Safely

By CLYDE LATCHEM*
Kansas State Fire Marshal, Topeka, Kansas

THE liquefied petroleum gas industry has been making rapid progress and it is my opinion that the opportunities presented the men in the industry now are equal to or even greater than those which were available to the pioneers of the industry a number of years ago.

I well remember when the liquefied petroleum gas industry passed from its initial phase, which consisted largely of the marketing of bottled gas for cooking purposes, into the second phase, which was centered on underground storage containers of larger capacity and offered unexcelled fuel for both cooking and heating. Later the aboveground storage tank came into its own. The great number of aboveground installations and a more extensive use of the gas completed what in my opinion would be the second phase of the industry.

Only recently we have entered what I would like to call the third phase. I refer to the rapidly increasing use of liquefied petroleum gas as a fuel for internal combustion engines. Tonight I want to talk to you about the use of this fine fuel for motor vehicles and other types of internal combustion engines. Each and every one of you in the industry have many problems relating to the use of equipment, cost of installation and the cost of selling the equipment utilized in using this fuel for internal combustion engines, all of which give you so much to think about that it could be entirely possible that you might overlook some of the very important features that should not be ignored if you are planning for the future.

Your ability to sell this equipment and fuel for use in tractors or other types of motor vehicles will depend largely upon the desire of the users to accept it and at the very least give it a try. Should there be an unfavorable reaction it will be reflected in sales and possibly an upturn would occur only after the cause of the unfavorable reaction had been eliminated.

Will you please follow me in an analysis that I believe will show you an open door through which an unfavorable reaction could intrude and seriously affect the progress you are making.

First, I wish to point out that in the early days of the industry

*A paper read at the LP-Gas Engine Fuel Service School, Manhattan, Kan.

or what I have called the first phase, liquefied petroleum gas was marketed in bottles. When the fuel supply ran low, a filled bottle was given in exchange for the empty one.

Servicemen Made Transfer

When the fuel was handled in larger containers, brought about by the use of underground and aboveground containers of large capacity, the dealer serviced the containers and filled them from a tank truck. In all these years the consumer—the person footing the bill—did not handle the liquefied petroleum gas. All he did was open a valve, touch a match to the gas, and consume the fuel that you had so conveniently placed for him in his storage container. The actual handling or transferring of liquefied petroleum gas was done by men in the industry, men experienced in handling the commodity, men fully informed of the safety practices that must always be observed if accidents are to be avoided. I am firmly convinced that many hundreds of accidents involving the use of this gas have been prevented because the servicemen, when on the premises of the users, gave timely advice and counsel to the users.

The average fuel container on a farm tractor is not of sufficient size to warrant the calling of a serviceman to fill it every time it needs refilling. This means that the owner, or an employe of the owner of a tractor will have to do his own servicing. In fact, gentlemen, this third phase of the industry is one where the experienced men of the industry are no longer handling or transferring all of the gas that is to be used. As the number of tractor fuel units increases, more people will be engaged in the business of handling liquefied petroleum gas. All people are not careful. Many of the users of this fuel could very possibly grow a little lax in their safety practices and because nothing happened might come to the conclusion that an accident "couldn't happen" to them. With a person of this type it is not a question of whether an accident will happen or not, it is merely a question of "when" it will happen.

Accidents are poor advertising for any business.

What Should the User Know?

Your presence here at this school is sufficient proof that you are interested in furthering the use of this fuel for tractors and motor vehicles and in insuring efficient operation of the installations you will make. You are experienced hands in the handling of liquefied petroleum gas. If you feel that you need all of this knowledge and special instructions—and you evidently do or you would not be here—then I ask you how much should the hired hand know, the man who will be expected to transfer the fuel and operate the tractor, under any and all conditions?

The point I wish to make is that if you are to avoid accidents in the farm yards and fields, you are going to have to educate the man who uses the equipment to use it safely. I would even go so far as

to advocate that you conduct a school composed of persons who have purchased equipment, as well as prospective purchasers. And when I say school I mean a school that not only teaches them the things to do to get the most efficient operation, but the things not to do.

There is a rosy future ahead if you will make it so. There is a better fuel available for men who will want it and you can make it available to them. The road to that rosy future should not be marred by needless accidents through ignorant handling of the fuel.

Demand for Water Heaters Soars Upward

An annual need for 2,850,000 automatic water heaters under the defense mobilization program was revealed in a recent report issued by the water heater division of the A. O. Smith Corp.

The report, based on figures from the U. S. Department of Commerce, U. S. Bureau of Labor Statistics and other authoritative sources, showed that there were approximately 20,000,000 such heaters in use in the United States at the end of 1950. This was a tremendous increase from the less than 1,500,000 in use in 1937. It represented, among other things, automatic heating of water in 57% of the single dwelling homes in the nation.

The report showed that the annual production of replacement heaters for civilian and industrial use is 2,000,000 units. This is based on a conservative estimate of 10 years for the life of a heater. In addition, according to Bureau of Labor Statistics, 850,000 heaters are needed annually for government and defense housing purposes.

•

In recent years the LP-Gas industry has been absorbing from 20% to 25% of the total water heater production—Editor.

Sleeper-Cab Transport Put in Operation in Texas

Operating on the highways in Texas is the first "sleeper cab" transport truck of the Stargas Dept. of Lone Star Gas Co. Drivers Audy Riggs and Clifton Bryant alternate driving the butane transport.

"Due to many city ordinances which restrict truck routes within the city limits, drivers are frequently prevented from overnight stops," reports Feild Foster, Stargas manager. "The sleeper cab will make necessary off-the-highway stops more comfortable for the drivers."

The compartment, a small deck back of the driver's seat, is equipped with a 6-ft. 3-in. innerspring mattress.

Due to the change in the length of the truck cab, twin, saddle-type fuel tanks of 60-gal. capacity are mounted on either side of the truck frame, replacing the single, 120-gal. tank formerly mounted back of the cab. The new unit, propane-powered, is expected to travel 200,000 miles before a motor overhaul will be necessary. At the present, it is estimated that the transport will travel about 75,000 miles a year. With cargo tank fully loaded, its weight is 48,000 lbs., which is the gross weight limit in Texas. Overall length is 44 ft. 6 in.

It is expected that as replacements are needed in the company fleet they will be made with similar sleeper-cab models, all equipped for use with LP-Gas.

Biggest Little Man in Colorado

1920 1951

Harry H. Torbit, age 18, when he graduated from high school—still wanted to be a banker, and was for almost 15 years. Harry H. Torbit, age 50, met a "challenge" 11 years ago. Five years later he was the "spark-plug" of Colorado's model LP-Gas code. Today, he is a leader in the business in the Rocky Mountain States area and in the nation.

"WHAT will Harry think and do about it?"

Wherever Colorado LP-Gasmen gather to discuss the problems of safety, promotion of new uses for the fuel, government regulations, and all matters affecting the welfare of the industry, it's an old refrain, "See Harry."

Whenever a problem turns up, in the Mountain States or in the nation, requiring time, travel, and extensive study, LP-Gasmen know they can depend on Harry, the man who never wanted to be the "biggest" but the "best" in the industry, the man who considers his own company and his competitors as component parts of an industry-wide fraternity.

Harry Torbit, owner of Union Gas & Equipment Co., Pueblo, Colo., frankly states and lives his business philosophy: "Some desire to possess the biggest business of its kind in their area. I have no such ambition. But I do want to operate our small

company so it will be recognized as one of the best in our state. I like to work with my competitors for the betterment of our industry, respecting them, and their ideas—and when you respect your competitor you will not attempt to 'cut his throat'."

One of a family of seven, young Harry, if he wanted any spending money, had to dig for it. At the age of nine he was, as he puts it, "lucky enough" to get a job as janitor in a country bank. After a year of this banking "connection" — sweeping, cleaning, carrying out ashes, etc., at the age of 10, he was convinced he should be a banker.

From that time he just went on working, thinking and saving, and when opportunity knocked he was ready.

A little over 10 years ago a friend of his who owned an LP-Gas company (his present firm), was in financial difficulty. Harry was asked to take over the company's management. After a month of operation, Harry discovered a double-barreled challenge: (1) To get the business out of the red. And (2) a service responsibility to a community and an industry.

How well Harry met these self-imposed responsibilities is written in the record of his last 10 years:

1. Developed, not the largest, but one of the best operated LP-Gas businesses in America.

2. Framed, and put through the Colorado legislature a "model" LP-Gas code (1945) almost single-handed, and before his state association, of which he was president the first two terms, was really functioning. As he says, "pounding up and down the corridors of our state capitol, and at a time when our legislators did not know of LP-Gas, what it was or how it could be used safely."

3. Headed and promoted in 1949 and 1950 the most successful state-wide demonstration of LP-Gas as the ideal domestic and motor fuel for rural use in America at the Colorado State Fair in Pueblo—more than 100,000 families, most of them prospects for LP-Gas service, indicating interest.

4. Represented his area all of this time on the board and committees of his national association, the LPGA.

5. Actively engaged in the civic and religious affairs of his home community—Boy Scouts (now finance chairman, Rocky Mountain Council); Pueblo Community Chest; active in and past president of Rotary; trustee of the First Presbyterian church, etc.; for, as Harry puts it, "Every man has an obligation to serve his community." Certainly Harry Torbit's "community" covers a wide area.

Buys Another LP-Gas Business

It is little wonder that a new opportunity has come to the "biggest little man" in Colorado. He now heads a newly incorporated concern in La Junta, Colo.—the Gas Supply and Appliance Co., an established LP-Gas business recently purchased by his company.

What are the requirements for success in the LP-Gas business?

Harry Torbit has the solution, and Safety is the key.

"Safety is something we live with all the time. By this I mean, we must all conduct our business in such a manner as to establish confidence in those we serve. When we do this we automatically contribute to the safety—and service—principles of our business. In so doing, it quite naturally follows we have done our work right. This means making installations as they should be made. In this manner we have taken care of our obligation at the 'customer level,' and that is the only place your work, and mine, can be done successfully."

—Keith Clevenger

House Heating and Tractor Loads Should Be Sold Together

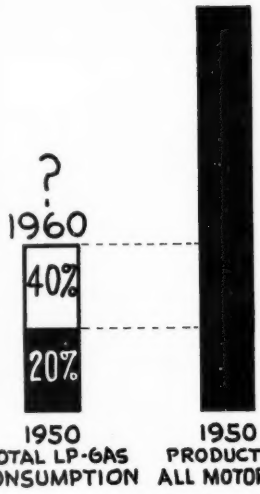
By C. R. DOUGHERTY*
Sales Department, Phillips Petroleum Co.
Bartlesville, Okla.

AFTER 20 years of development and market experimentation the liquefied petroleum gas industry is reaching maturity. It can no longer be considered the stepchild of the petroleum industry and because of its increasing stature and importance it is now being granted a voice in the industry councils. It is estimated that at the close of the year 7½ million farm and suburban installations were served by liquefied petroleum gas in the United States. The petroleum industry was called upon to produce 2.143 billion gallons of liquefied petroleum gas to serve domestic consumers and 1.190 billion gallons for industrial utility and chemical manufacturing purposes. This accounted for a total of 3.333 billion gallons with an additional 6 billion gallons for motor fuel blending or reforming in the manufacture of aviation gasoline, motor fuel and synthetic rubber.

You can see from this that the present consumption of liquefied petroleum gas is substantial, but we are convinced that the liquefied petroleum gas industry is on the threshold of an even greater period of expansion. In a recent paper on the subject, "Availability of Liquefied Petroleum Gas for Motor Fuel in Commercial Vehicles," R. C. Alden, chairman of the Research Planning Board of Phillips Petroleum Co., says: "Many changes have taken place in the petroleum industry, the combined effect of which result in a sudden increase in the practical availability of liquefied petroleum gas for a market the size of the tractor, bus and truck field. Some of these changes have been gradual, such as the fact that discoveries of natural gas are increasing faster than is the consumption of natural gas, which in turn is increasing faster than the discoveries and consumption of crude oil.

"Other changes are relatively new as for example, the extraction of natural gas liquids from high pressure natural gas in cycle plants and the copious production of liquefied petroleum gas in catalytic cracking in refineries. The total

*A paper delivered at the meeting of the Indiana LP-Gas Assn. in Indianapolis.



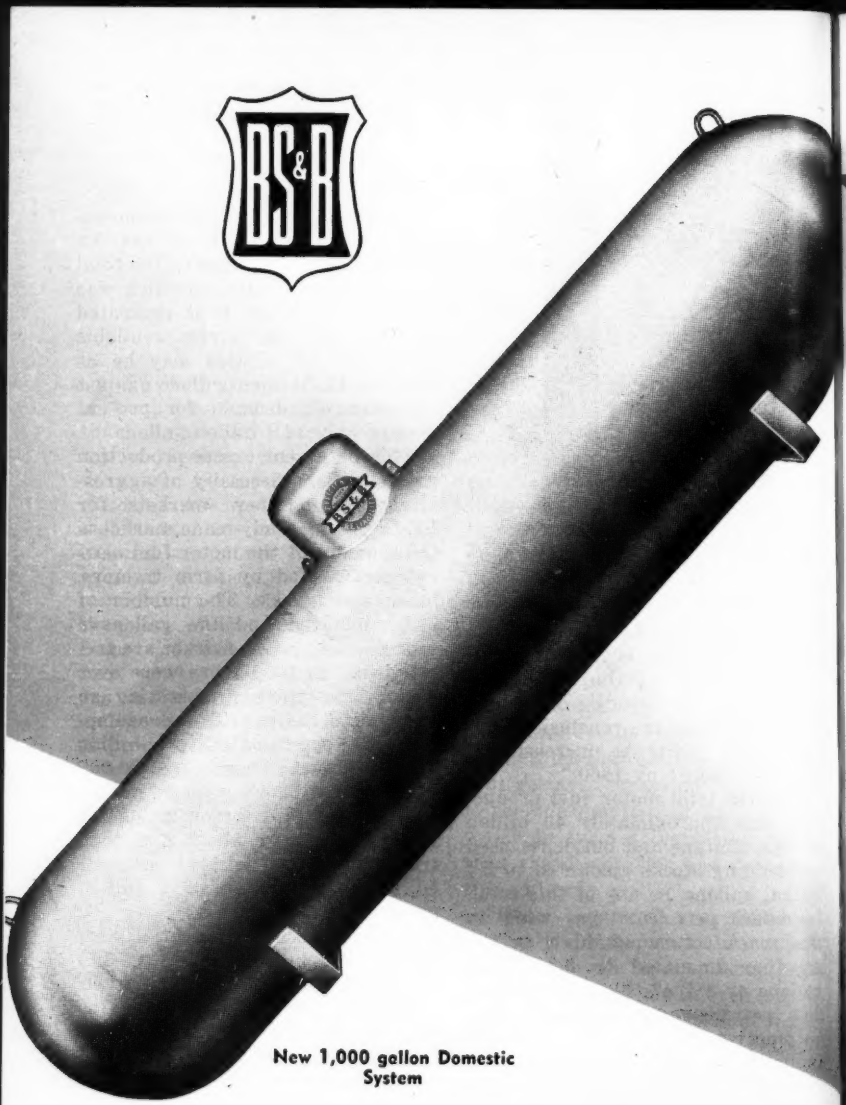
The industry's growth possibilities are seen in an interesting perspective when the consumption (production) of LP-Gas, for all uses, is compared with the total production for all motor fuels.

consumption (production) of liquefied petroleum gas is currently estimated at 20% of the motor fuel production. A study of major trends leads to the conclusion that this could easily be increased to 40% (or more) by 1960."

In 1949 total motor fuel production was approximately 40 billion gallons. Butane and butylenes used as blending stocks amounted to 2.4 billion gallons, or 6% of this total. Liquefied petroleum gas used in the manufacture of high octane gasoline amounted to 3.2 billion gallons or 8% of this total. Liquefied petroleum gas for all non-automotive uses such as domestic, industrial, utility, chemical and synthetic rubber manufacturing amounted to 2.8 billion gallons, or 7% of 1949 motor fuel production. It is interesting to note that LP-Gas potentially available from existing facilities in 1949 was 9.3 billion gallons in excess of the total consumption of LP-Gas which was 8.4 billion gallons. It is estimated that by 1960 the excess available production of LP-Gas may be as much as 17.2 billion gallons against an estimated demand for present uses of only 14.8 billion gallons.

This imminent excess production points out the necessity of aggressively seeking new markets for LP-Gas. One ready-made market is the segment of the motor fuel market represented by farm tractors, buses and trucks. The number of units involved and the gallonage represented by this market are tremendous. In 1950 there were over 3.5 million tractors operating in the United States with a consumption of approximately 3.5 billion gallons of fuel. There were 100,000 buses operating with an estimated consumption of 1 billion gallons of fuel. There were about 8 million trucks registered with an estimated fuel consumption of 9 billion gallons.

This represents a potential market of 13.5 billion gallons or 1/3 of the entire motor fuel market. It is not anticipated that LP-Gas will capture a large percentage of this market, but 15% of it would be equivalent to the entire domestic market for LP-Gas in 1950. If liquid fuels should be in short supply because of an accelerated de-



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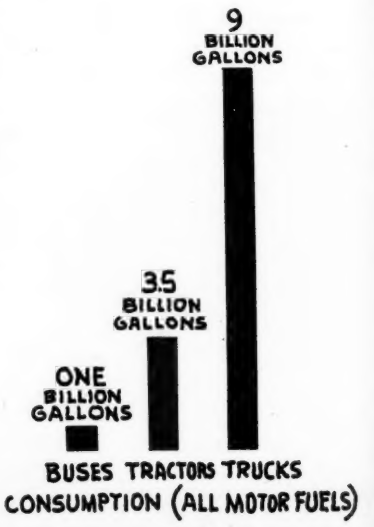
mand by the Army and Navy, LP-Gas might well be called upon to supply a substantial portion of this motor fuel market.

Because of the favorable fuel cost and operating advantages of LP-Gas as a motor fuel, we believe the truck and bus market holds great possibilities. We believe that delivery truck fleets and city bus fleets will be immediate prospects since these fleets return to a common terminal daily, consequently can use one large common storage. Bus manufacturers are beginning to manufacture buses completely equipped to burn propane and some are supplying kits for conversions from gasoline.

Also many city bus lines are operating at a loss and are looking for means of reducing operating costs. Over-the-highway buses are good potential possibilities, but will require more investment due to more LP-Gas bulk plants and filling stations required to serve them. Truck freight lines offer an even greater potential outlet for LP-Gas. This business has been developing more slowly since few truck manufacturers have shown a willingness to manufacture engines designed especially to burn propane or to supply kits to convert existing gasoline units. Such equipment will no doubt be made available as truck prospects and customers' demands become more insistent.

The above holds true for city delivery trucks, and taxicabs, but these also have tremendous possibilities as large consumers of LP-Gas. All of these internal combustion applications are ideal loads for the LP-Gas industry, because they have an *even demand* throughout the year.

Since bus and truck fleet operators will install their own storage and fueling facilities and buy direct from producers, the LP-Gas distributor may wonder how he can capture some of this attractive market. The farm tractor is the most obvious answer to this, but there is another important market that is not always recognized by distributors. In every community



Opportunity knocks for LP-Gas in this segment of the motor fuel market. Sales, in these three categories, totaled 13.5 million gallons in 1950, or one-third of the entire motor fuel market. If LP-Gas could sell 15% of this demand, it would be equal to the total domestic sales of LP-Gas in 1950.

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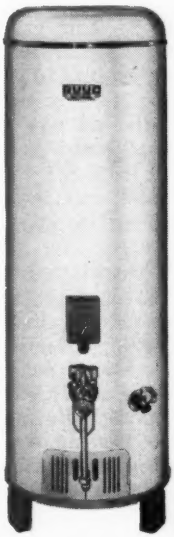
Write for Bulletin No. 202



RUUD PRODUCTION NEWS

RUUD PRODUCTION is determined by the materials supply—Monel, steel, zinc, copper. Monel, in particular, is short because it is a vital war material. During this period when Ruud water heaters will be made in limited numbers, high manufacturing and performance standards will be rigidly maintained.

Repair parts stocks will be available for maintenance of Ruuds now in use.

The situation is ever-changing so check your Ruud representative for current information.

MEMBER national LP-GAS PROMOTIONAL program

RUUD MANUFACTURING COMPANY

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OTHER RUUD PRODUCTS: Galvanized-steel-tank water heaters . . . Commercial & Industrial water heaters . . . The Ruudiator House-heating Boiler.

there are numerous small fleets of bread trucks, laundry trucks, milk trucks and taxicabs. These operators cannot afford expensive storage or fueling facilities and will depend on the LP-Gas distributor to provide this service. They are logical users of LP-Gas because of the nature of their operation.

First, they operate out of a home base over a limited area, and fuel servicing is no great problem. Second, these units spend much of their time starting, stopping and idling. With liquid fuels, crank case dilution and cylinder wall washing with subsequent high maintenance costs are serious problems. Using LP-Gas as fuel, these evils are eliminated and maintenance costs are drastically reduced. You can't afford to overlook this natural market for LP-Gas.

Another great market for liquefied petroleum gas is the domestic and farm market. It is estimated that there are 10 to 12 million prospective users of liquefied petroleum gas who are now using such fuels as coal, wood or oil. The recent trend from city to suburban living provides you with an increasing number of prospects for the use of LP-Gas.

Of most interest and importance to you as distributors of LP-Gas is the almost limitless possibility of selling America's prosperous farmers on the convenience and economy of using LP-Gas for cooking, water heating, refrigeration, house heating, tractor operation, brooders, stock tank heating, water pumping, etc. Distributors in the South and Southwest have been doing this for years and bulk distribution is rapidly moving into the Mid-West, North and East.

To date there has been relatively little effort directed toward the conversion of tractors to burn LP-Gas, but a great amount of effort has been directed toward selling the house heating load. We believe that these two big new loads must be sold simultaneously if your bulk business is to retain any semblance of a seasonal balance. Here is the reason why! The average farm home will use about 35 gallons of propane per month for cooking, water heating and refrigeration, but house heating will require ¼ gallon per degree day. Throughout the Midwest this would mean a demand on a quarterly basis as follows:

1st quarter	839 gallons
2nd quarter	260 gallons
3rd quarter	119 gallons
4th quarter	639 gallons
Total	1857 gallons

On the other hand the average tractor will use about 1000 gallons of propane per year with a quarterly demand as follows:

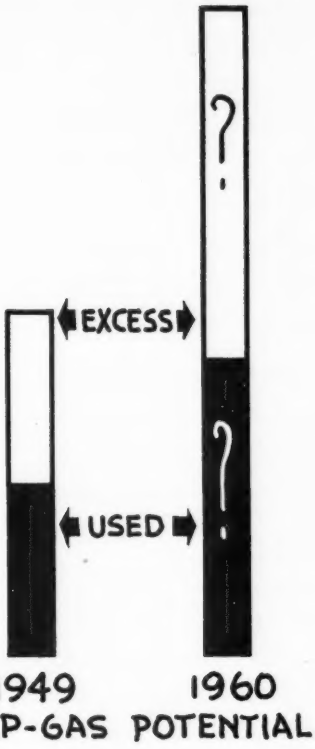
1st quarter	90 gallons
2nd quarter	490 gallons
3rd quarter	250 gallons
4th quarter	170 gallons
Total	1000 gallons

Adding the two loads, the quarterly demand will be:

1st quarter	929 gallons
2nd quarter	750 gallons
3rd quarter	369 gallons
4th quarter	809 gallons

Why is the LPG producer inter-

There will be no future shortage of LP-Gas. The industry can take a bigger bite of this potential by working for a balanced load. Producers will provide the gas for an increased year-round demand.



ested in a balanced load? First, because LP-Gas cannot be stored economically in large quantities as can gasoline, fuel oil and distillate. Second, because production facilities and transportation facilities cannot be operated for only a portion of the year except at an excessive cost.

We made a study about a year ago which indicated that it cost 1.25c per gallon more to serve a 2 to 1 ratio customer during the six summer months than it did to serve a 1 to 1 ratio customer. Based on today's labor and steel costs this additional cost of serving poor ratio business would probably be 1.5c per gallon. Last summer some distress propane was marketed for as low as 1.5c per gallon and the producers took it on the chin. Producers are unwilling to invest millions of dollars in a losing proposition and production facilities can be expected to increase only if a profitable market exists.

Balanced Load Essential

The best way that distributors can insure themselves of an adequate future supply of LP-Gas is to maintain a balanced load so that the domestic LP-Gas market is attractive and profitable to the producer. If it is not an attractive market the LP-Gas won't be recovered or other markets will be found by the producers. I am not saying this to frighten anyone—it is a basic economic fact which all of you must recognize.

There is an even more immediate and obvious reason why you as an LP-Gas distributor should be interested in a balanced load. You can't afford to invest in plant equipment or rolling stock to have it idle six months out of the year any more than the producer can afford it.

Availability of consumer storage

tanks will probably be limited in 1951, but this need not prevent you from building your summer load. You should sell every farmer who has a large tank on the idea of converting his tractor to take advantage of the superior fuel already available to him. If you are able to get tanks be sure that they are installed where you get the tractor load as well as the heating load. Only in this way can you maintain a balanced demand that a producer will be able to supply.

Fuel to Meet Increased Demand

There are tremendous reserves of LP-Gas and the producers will put in additional extraction and refining facilities and obtain additional transportation as rapidly as necessary to meet the increasing demand for LP-Gas if this demand is a balanced one. There are now and will continue to be local shortages and transportation bottlenecks as long as consumers and distributors demand 4 to 5 times as much LP-Gas in the winter as they take in the summer. It just is not and cannot be available on that basis.

Since most of the reserves and 73.6% of the total LP-Gas production are located in a few South Central states, it is obvious that getting LP-Gas to market is a major problem in logistics. We are continually expanding our own production facilities, ordering more tank cars and extending our pipe line system. It may surprise many of you to know that Phillips Petroleum Co. is moving large quantities of butane and propane—along with gasoline and distillate—by pipe line from Borger, Texas, to LaJunta and Denver, Colo. From these terminals distribution fans out in all directions by rail and truck.

Through our products pipe line from Texas to Kansas City, St. Louis and Chicago we are moving gasoline, distillate and butane and have done so for many years. We are now making every effort to obtain steel to complete another parallel line to bring propane from the area of greatest reserves and production to the Midwest. From terminals along this line distribution will again fan out in all directions by rail and truck.

Certainly a distribution program of this magnitude indicates the confidence of Phillips Petroleum Co. in the future of the liquefied petroleum gas industry. We believe it will be of great importance to the LP-Gas industry in the midwest and will alleviate temporary local shortages in this area that have been brought about by transportation bottlenecks.

Protane Corp. Expanding Into Ohio, Indiana, and Michigan

The Protane Corp., Erie, Pa., recently announced the purchase of the Dayton Suburban Gas Co. of Dayton, Ohio, in line with the company's expansion into the states of Ohio, Indiana, and Michigan, according to H. N. Forman, president of Protane.

One of the early marketers of bottled gas, Protane Corp.'s present range of activity is along the Atlantic seaboard from New York to Florida and as far west as Kentucky.

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Californians Meet In Bakersfield May 11-12

THE Liquid Gas Dealers Assn. California has divided Califor into 16 geographical districts. E section is represented on the bo of directors by one member.

The subdivisions and the count they include are shown on the companying map and tabulation.

The second annual meeting of t organization is scheduled for Bake field May 11-12.

1. Del Norte, Mendocino, Humbolt, La Trinity.
2. Siskiyou, Modoc, Shasta, Las Tehama, Plumas.
3. Sonoma, Napa, Marin, Solano.
4. Glenn, Colusa, Butte, Sierra, Yu Nevada, Sutter.
5. Yolo, Sacramento, Placer, El Dora
6. San Joaquin, Amador, Alpine, C averas.
7. Contra Costa, Alameda.
8. San Mateo, Santa Clara, Santa Cr San Benito, Monterey.
9. Stanislaus, Merced, Mariposa, T lumne.
10. Fresno, Madera, Kings, Tulare.
11. Kern.
12. San Luis Obispo, Santa Barbar Ventura.
13. Los Angeles, Orange.
14. San Bernardino, Inyo, Mono.
15. Imperial, Riverside.
16. San Diego.

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We invite you to compare this cylinder valve, point by point, with all others. You will find it . . .

1. **Fills Faster.**
2. **Opens and Closes Easier.**
3. **Is Smaller in Size.**
4. **Safety Relief Area .117 sq. in.**
5. **Proven Design "O" Ring for Positive Seal.**
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We call your particular attention to the quality of service we have rendered the industry since its beginning.

U. L. listed—Approval by Bureau of Explosives.

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Associations

NGAA to Meet in Tulsa For 30th Annual Convention

Presentation of the Hanlon Award for meritorious service to the natural gasoline industry will be an outstanding feature of the 30th annual convention of the Natural Gasoline Assn. of America when it meets in Tulsa April 25-27.

In addition, the convention, with attendance expected to exceed 1100, will offer a program of addresses by leading figures in aviation and oil preparedness organizations in Washington, plus the usual technical papers dealing with the natural gasoline and cycling industries. W. A. Baden, president of Anchor Petroleum Co., is program chairman.

Meeting in Tulsa for the first time in nearly 10 years, the association will convene at the Mayo hotel, according to William Lowe, secretary, with James E. Pew, NGAA president, presiding. Entertainment will be supplied by the Natural Gasoline Supply Men's Assn., with the theme "Pirates" the basis for festivities.

Originated by E. I. Hanlon, pioneer of the natural gasoline industry, and sponsored by the NGAA, the Hanlon Award will be presented for the 15th time to an individual whose effort or outstanding service at any time has resulted in constructive developments

W. A. BADEN

WM. F. LOWE

in the following phases of the natural gasoline or cycling industries:

1. Research to create broader use of industries' products.
2. Manufacturing process or equipment for greater yield or more economical operation.
3. Test methods and procedures or advancement in laboratory technique.
4. Handling, storage or transportation of products.
5. Marketing, accounting, public or industrial relations, safety development, or any business phase of the industries.

Past winners of the award, together with their company affiliations at that

time and the year, include the following: Richard C. Alden, Phillips Petroleum Co., 1937; James W. Cowles, Shell Oil Co., Inc., 1938; George G. Oberfell, Phillips Petroleum Co., 1939; Dr. George Granger Brown, University of Michigan, 1940; Alois Kremser, Standard Oil Co. of California, 1941; Edwin O. Bennett, Continental Oil Co., 1942; Franklin P. Peterson, Mid-Continent Petroleum Corp., 1943; Meinhart H. Kotzebue, Gasoline Plant Construction Corp., 1944; James E. Pew, Sun Oil Co., 1945; W. N. Lacey, California Institute of Technology, 1946; William K. Warren, Warren Petroleum Corp., 1947; Col. George A. Burrell, Atlantic States Gas Co., 1948; Francis E. Rice, Phillips Petroleum Co., 1949; and Dr. Donald L. Katz, University of Michigan, 1950.

GAMA

The Washington scene and its relation to the gas appliance and equipment industry will be the keynote of the annual meeting of the Gas Appliance Manufacturers Assn., it is announced by H. Leigh Whitelaw, managing director. The meeting will be held at The Drake in Chicago on April 16-17.

The meeting will include divisional meetings and two luncheon sessions. One will be devoted to general GAMA business matters, and a second will hear representatives of the American Gas Assn.

Leland M. Feigel, of Servel, is serving as program chairman for the meeting.

Officers and directors of the Indiana LP-Gas Assn. who were elected at the Feb. 7-8 first annual meeting. (Seated left to right): J. R. Crowden, Peru, vice president; T. M. Feely, Indianapolis, president; C. P. Keely, Indianapolis, secretary-treasurer. Directors (standing left to right): H. Datman, Versailles, District 8; T. C. Unger, New Castle, District 9; P. W. Ogle, Jeffersonville, District 7; T. K. Holden, Linton, District 6; R. G. Grenda, LaPorte, District 2; C. J. Bucko, Gary, District 1; C. A. Raub, Huntington, District 4. Not present: E. G. Seagly, District 3.

Eastern Canadian District

A two-day meeting of the LPGA's Eastern Canadian District was held Feb. 15-16 in Montreal with Walter Walsh, district director, presiding over the 76 members in attendance.

Edward F. Tabisz, Underwriters' Laboratories of Canada, spoke on the work of his organization with particular emphasis on the LP-Gas branch. Other speakers included Earl B. Hart, Shell Oil Co., who discussed bottling and distribution operations; R. A. Harries and W. G. Child, who presented an open-forum discussion of LP-Gas insurance problems; and R. H. Mahnke, LPGA's manager of district organizations.

Kentucky

Tentative plans for the annual convention and trade show of the Kentucky Liquefied Petroleum Gas Assn. were made at the board of directors meeting in Louisville Feb. 11. The directors chose Aug. 20-21 as the dates and the Seelbach hotel in Louisville as convention headquarters.

Chairmen of convention committees include Logan Dixon, trade show; registration, J. M. F. Hays; ladies entertainment, Mrs. Lou Stauble; convention entertainment, Lou Stauble; and speakers, Melvin E. Gayer.

Minnesota Group Concerned Over Possible Law Change

Charles D. Bubar, president of the Minnesota Petroleum Gas Assn., has notified Minnesota dealers of House Bills Nos. 397, 616, and 617 which propose changes in laws affecting the distribution and installation of liquefied petroleum gas in that state. Primarily, the proposed legislation would abolish the office of state fire marshal, under whose supervision inspections and controls have been centered in the past, and Mr. Bubar urges members of the association and others to protest this change.

More information can be had from Mr. Bubar in care of Northwest Hydrogas Co., New Brighton; John L. Locke, Northwestern Blaugas Co., St. Paul; and Hilder N. Hoaglund, Box 96, St. Louis Park, Minn.

Michigan

Officers elected at the Jan. 29 meeting of the Michigan LP-Gas Assn. were Bradley Price, Pyrofax Gas Div., East Lansing, president; Clarence Habermill, Fuelgas Co., Flint, vice president; and Ben Gower, Michigan Bottled Gas Co., Eureka, secretary.

For the complete story, see March issue, BUTANE-PROPANE *News*, p. 76.

BEN A. MARSH

B. A. Marsh Becomes Secretary For LPGA West Coast Office

Benedick A. Marsh has been appointed West Coast secretary of the Liquefied Petroleum Gas Assn., Howard D. White, executive vice president of the organization, has announced. He succeeds R. W. Dorst, who has resigned to become assistant to general manager of the Chemical Process Co., Redwood, Calif.

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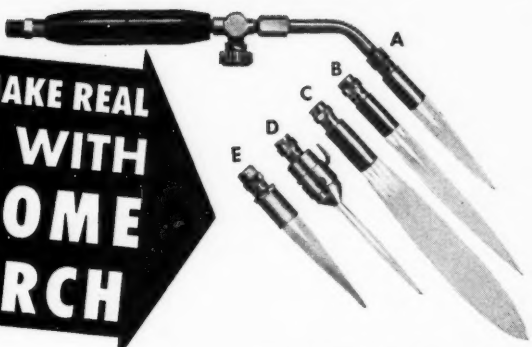

77A: 4" flame for soldering, electrical work, copper tubing

77B: 6" flame for soldering heavy wire & copper tubing

77C: Broad, soft 8" flame for lead conduit work & wiping

77D: 4" needle point flame for narrow areas, small parts

77E: Large capacity, 4" flame for work on streamline fittings

MANY PROSPECTS—Plumbers, electricians, auto mechanics, sheetmetal workers and ranchers use the RANSOME 77 Torch for direct flame soldering, light brazing, lead wiping, electrical work and all the uses indicated above. Quickly-changed heads enable users to get exact type of flame needed for each use.

3 PROFIT ANGLES—You make money on the initial sale of the 77 torch, then profit regularly on LP-Gas bought by the users. Safe, inexpensive LP-Gas converts users into first-rate prospects for other industrial and home appliances you sell.

Investigate the *volume-building* potentials of RANSOME torches and furnaces NOW. Write today for price list, dealer discounts, and big, illustrated 20-page catalog.

Check These Additional Selling Points

- Extremely stable flame; will not blow out.
- Use in any position, even upside down.
- Available with all or any 1 of 5 interchangeable heads.
- Light, well-balanced.
- Hand-fitting bakelite handle.
- Precision made, hand polished.
- 14" long; weighs ¾ lbs.

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Ransome

tion from the University of California at Los Angeles, Mr. Marsh also attended the University of Kentucky. He started his business career in 1932 as a branch department store manager for F. S. Marshall Co., Louisville, Ky., and later served as an auditor for the International Harvester Co., also at Louisville, as a collection manager for the Valley National Banks, Phoenix, Ariz., and as an administrative assistant to the plant superintendent of the AiResearch Manufacturing Co., Los Angeles, Calif. In recent years he has worked as credit sales manager for the Ransome Co., Oakland, Calif.

Mr. Dorst entered LPGA's employ last fall after several years in the chemical industry.

LPGA's 20th Annual Convention Will Be a Major Production

WITH its present membership at an all-time high and the industry growing by leaps and bounds, the Liquefied Petroleum Gas Assn. expects to attract nearly 2000 visitors to its 20th anniversary convention and trade show in Chicago May 7-10. Both the speaking program and the greatly expanded exposition of appliances and equipment will be held in the Stevens, the world's largest hotel.

Everyone in the LP-Gas industry, whether a member of the association or not, is cordially invited to attend, according to Roy R. Johnson, Fuelane Corp., Liberty, N. Y., chairman of the arrangements committee.

Speakers scheduled to address the general sessions include a national political figure whose name has not yet been announced; James E. Pew, manager, natural gas and natural gasoline division, Sun Oil Co., Philadelphia; Dr. Cylvia A. Sorkin of St. Louis, Mo., prominent lecturer on public relations subjects; Lee A. Brand, vice president, Empire Stove Co., Belleville, Ill., and chairman of the National Committee for LP-Gas Promotion, and Howard D. White, LPGA executive vice president, Chicago.

Dr. Cylvia Sorkin

Mr. Pew, who was director of the Natural Gas and Natural Gasoline Division, Petroleum Administration for War, during World War II, will give convention-goers an insight into the probable effect of the present international emergency on the LP-Gas industry and Dr. Sorkin has chosen as her subject, "Your Personality Is

The skyline across Grant Park in Chicago where the 20th annual convention and trade show of the LPGA will be held May 7-10.

Showing." Mr. Brand will reveal the latest developments in the National LP-Gas Promotional Program and Mr. White, who has been spending most of his time in the nation's capital during the past few months, will report on Washington developments affecting the LP-Gas industry.

Peter A. Anderson, Utilities Distributors, Inc., Portland, Me., president of the association, will preside at the general sessions.

LPGA's six sections—Marketers, Appliance Manufacturers, Equipment Manufacturers, Producers, Utilities and International—will hold individual meetings the afternoon of May 9. Open forums at these sessions will enable industry men and women to discuss, on an informal basis, problems of mutual interest.

At the meeting of the Marketers Section, the program will include talks by E. Carl Sorby, Geo. D. Roper Corp., Rockford, Ill.; Carroll Willis, Siebert & Willis, Inc., Wichita, Kan., and Stanley Gorman, water heater promotion manager, Gas Appliance Manufacturers Assn., New York. They will speak on sales promotion, electric competition and GAMA's water heater activities, respectively. Harris Helmer, Badger Gas Products, Platteville, Wis., section chairman, will preside.

K. J. Forderbrugen, Minnesota Valley Natural Gas Co., St. Peter, Minn., chairman of the Utilities Section, has announced that his group will hear a presentation by Harry Andrews, vice president, United Petroleum Gas Co., Minneapolis, tracing the growth in utility use of LP-Gas and forecasting the industry's future potential in this field. Programs will be announced later for the other four divisional meetings. Conducting these sessions as chairmen will be Pierre Vinet, Geo. D. Roper Corp., Appliance Manufacturers Section; Joseph

JAMES E. PEW

LEE BRAND

Kettner, Delta Tank Manufacturing Co., Baton Rouge, La., Equipment Manufacturers Section; H. W. Rigterink, Sun Oil Co., Philadelphia, Producers Section, and Paul Thompson, Standard Oil Co. (N. J.), New York, International Section.

Although the 1951 trade show has been considerably enlarged, a "sell-out" of space appears in prospect to appliance and equipment manufacturers and other exhibitors.

Headlining the social events at the convention will be the annual banquet and the variety show, "Gas-Flame Gaieties of 1951," on May 9. A cocktail party will be held on May 8.

Mrs. Roy R. Johnson, chairman of the women's entertainment committee, is preparing a busy schedule of special activities for the feminine contingent.

International Fair Will Show LP-Gas Equipment

The Brussels International Fair will be held in Brussels, Belgium, from April 21 to May 6 and will feature both foreign and domestic displays.

Among exhibits will be equipment for distribution and utilization of liquefied petroleum gas.

CALENDAR

1951

April 2-3—Iowa LP-Gas Assn. Convention. Savery Hotel. Des Moines.

April 4-6—Missouri LP-Gas Assn. Annual Convention & Trade Show. Hotel de Soto, St. Louis.

April 11-12—Illinois LP-Gas Assn. Convention. Hotel Leland. Springfield.

April 16-17—Minnesota Petroleum Gas Assn. Spring Meeting. Curtis Hotel. Minneapolis.

April 16-18—Gas Appliance Manufacturers Assn. Annual Meeting. Drake Hotel. Chicago.

April 17—Eastern Maine LP-Gas Assn.

April 19-21—Florida-Georgia Gas Assn. and Florida LP-Gas Assn. joint meeting. Hollywood Beach Hotel, Hollywood, Fla.

April 25-26—Ohio LP-Gas Assn. Spring Meeting. Fort Hayes Hotel. Columbus.

April 25-26—Ohio LP-Gas Assn. Spring Convention. Fort Hayes Hotel. Columbus.

April 25-27—Natural Gasoline Assn. of America annual meeting. Mayo Hotel, Tulsa.

April 26-27—Pacific Coast Research Conference. Claremont Hotel. Berkeley, Calif.

May 7-10—LPGA Annual Convention & Trade Show. Stevens Hotel. Chicago.

May 11-12—Liquid Gas Dealers Assn. of California. Bakersfield.

June 4-5—Central States District Convention & Trade Show. Tulsa Hotel. Tulsa.

June 10-12 — Arkansas Butane Dealers Assn. Annual Convention and Trade Show. Little Rock.

June 10-12 — Mountain States District (LPGA) Convention and Trade Show. Evergreen, Colo.

June 11-15—South Eastern LP-Gas Service School. Southern Technical Institute. Chamblee, Ga.

June 12—National Butane-Propane Assn. District Meeting. Texas Hotel, Fort Worth.

June 13-15—Texas Butane Dealers Assn. Annual Convention & Trade Show. Hotel Texas, Fort Worth.

June 25-27—Mid-Continent LP-Gas Service School. University of Kansas. Lawrence.

July 16-18 — Mid-West LP-Gas Service School. Iowa State College. Ames.

Aug. 5-6—Tennessee LP-Gas Assn. Convention. Andrew Jackson Hotel. Nashville.

Aug. 20-21—Kentucky LP-Gas Assn. Convention and Trade Show. Seelbach Hotel. Louisville.

Denver Service School Students Overflow Registration Limits

A CAPACITY turnout of both dealers and servicemen reported for the 3-day LP-Gas service school which was held under the auspices of the Colorado Liquefied Petroleum Gas Assn. and the National LPGA in Denver, Feb. 19-21.

Utilizing the new Denver University civic center campus building, with far more seating capacity than previously available, the school heads were able to do away with split meetings and duplicated classes, such as have often been necessary in the past. Also, there was ample space to set up all exhibits and training aids in one room, resulting in centralized interest and efficiency.

The Monday morning session of the 19th began with the introduction "Purpose and Scope of the School" by J. L. Thompson, chairman of LPGA District No. 3, and head of the educational committee of the zone. Mr. Thompson outlined how the previous service schools have benefited Colorado dealers, with several specific examples, and dwelt upon the importance of good service in possible war conditions. He made suggestions as to how dealers could disseminate information gained at the school.

The first lecture was by Oliver Johnson, of Standard Oil Co. of California, San Francisco, on "Properties and Characteristics of LP-Gas." The results of scientific experiments and increased research into the control and use of liquefied petroleum gases were brought out and their application to servicing carefully reviewed.

After lunch, the "students" found high interest in a talk by George H. Larson, of Kansas State College, on "A Field Study on the Use of LP-Gas as Tractor Fuel." Slides and charts showing the results of tractor LP-Gas carburetion were used, depicting effective savings accomplished with propane on Kansas farms studied by the college. Tips on carburetor servicing, as well as the sales possibilities among farmers were brought out during this study.

Discusses Appliance Venting

Next was C. E. Blome, of the William Wallace Co., Dallas, who discussed "Venting of Gas Appliances in High Altitudes" as an engrossing subject. This was the sequel to a study on the same subject which was presented during 1950, and introduced successful methods used by dealers in various Rocky Mountain states. Much emphasis was laid on the necessity of carefully determining the draft suction on any type of LP-Gas installation, both before and after installation, and rectifying any lack of it.

On Tuesday, the lead session was "Transfer of LP-Gas" with L. W. Smith, Smith Precision Products Co., South Pasadena, Calif., on the rostrum. Safety precautions at pressure connections, proper metering, and visual checks in all steps of transfer were discussed one by one to individual groups of servicemen.

Mr. Smith was followed by Ralph Engstrom, The Bastian-Blessing Co., Chicago, who presented many valued

tips in a talk entitled "Regulator Operational Problems." Methods of securing smooth regulation and meter registration were discussed, with examples provided from Bastian-Blessing's files.

Attracting servicemen from all franchised Servel dealerships was the talk by Blair Hughes, of Servel, Inc., Evansville, Ind., on "Servicing of Servel Refrigerators." Standard service procedure was discussed, with many questions from the assembled servicemen during the open forum which followed.

On the final day, M. B. Gault, of Robertshaw Thermostat Division, Youngwood, Pa., spoke on "Thermostats and Pilot Generated Controls" to aid dealers in effecting the best setting for heat controls, and C. C. Owens, of Surface Combustion Corp., Toledo, Ohio, went into "Problems of Space Heating" for the benefit of dealers and servicemen with large heating contracts ahead. The final lecture was delivered by G. B. Buck, of the Public Service Co., of Denver, on "Customer Relations," accenting the importance of good service and making the customer aware of the dealer's steps to insure operation of the LP-Gas appliance.

Oklahoma's Governor Appoints Special LP-Gas Board

Oklahoma's Governor Murray has recently appointed the members of the state liquefied petroleum gas board, a semi-official body that works with the state fire marshal.

He reappointed Logan Hyder, The Hyder Co., Chattanooga, and appointed Claude Berry, Eastern Butane Consolidated, Tahlequah, and J. Paul Franks, Bochito, to succeed Dewey Wood, Ardmore, and Ralph Lillard, Shawnee.

The board met March 7 to reorganize and considered legislative recommendations to the Oklahoma legislature now in session.

While no legislative recommendations were made, it did approve a motion proposing that the state fire marshal adopt an amendment to the 1950 Oklahoma rules and regulations relating to liquefied petroleum gas to provide that the minimum vapor pressure for type 200 storage containers shall be 215 pounds instead of 200 pounds, to comply with recent changes in the national fire underwriters code (NBFU Pamphlet 58, Page 28).

The Governor has appointed W. J. Marshall of Stillwater, Okla., to succeed M. G. Young as Oklahoma state fire marshal. Mr. Marshall is a former member of the Oklahoma house of representatives and a former business manager of Oklahoma A & M College of Stillwater.

Mr. Young, retiring fire marshal, was appointed by former Governor Roy Turner four years ago.

Cylinders for West Indies

Liquilux Gas Services, Inc., of Houston, recently shipped 1200 100-lb. cylinders of LP-Gas by one boat to the West Indies. Chas. C. Wight says his business is built mainly on export trade and that he has several thousand customers. He has operated two bulk plants in Cuba for the past two years. Speaking of his domestic business, Wight points out that he operates in a restricted area. He doesn't go across his line no matter how green the field on the other side. He admits, however, that he does comb his ship channel and bay shore area very thoroughly. He has 10 acres in his Houston plant site, three acres improved.

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C-35

LP-GAS CYLINDER VALVE

MOST widely accepted!

MOST widely used cylinder valve in the LP-Gas industry

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KEROTEST MANUFACTURING CO.

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Current News From Washington

THE MRO—"Maintenance, Repair and Operation"—program of the National Production Authority, U. S. Department of Commerce, has been labeled "a program to maintain at peak efficiency the nation's existing equipment for the production of goods and services," by Manly Fleischmann, new NPA Administrator. Whether it works out or not seems to be up to business and industry—mainly, **you.**

By Larston D. Farrar
Special Correspondent

Maintenance Supplies Available

Under this program, Mr. Fleischmann said, all establishments in the U. S.—warehouses, factories, retail and wholesale stores, service shops, farms, hospitals, schools, libraries, churches, federal, state and local governmental agencies—may, when necessary, use a priority rating to procure equipment and supplies for maintenance, repair and operation of **present** facilities.

"We cannot let the need for materials and equipment to build new facilities interfere with the maintenance of existing capacity," Mr. Fleischmann declared. "We can afford a few pounds of metal today to keep a machine running rather than several tons tomorrow to make a replacement machine. And this way we avoid the loss of production and employment that would result if we allowed our present equipment to fall into disrepair.

"It is essential that the nation's present production and service facilities be kept in good repair so that they can operate at the maximum rate consistent with direct defense requirements . . . It is believed that the MRO program will not interfere in any manner with the defense program because the materials required constitute a small percentage of the total supply."

The MRO program came about in NPA Regulation 4, which is permissive in character. No one is required to use the ratings assigned to purchase his MRO supplies, but if he does so he becomes bound by the limitations of the regulation.

Regulation permits use of the rating, identified as DO-97, by business concerns and other institutions without individual authorization by NPA. The rating may be used solely to acquire maintenance, repair and operating supplies and may not be used to purchase production material (i.e., material or components to be incorporated in end products) nor to purchase major capital items. The rating is equal to all other DO ratings and is fully extendible. Ratings are applied in accordance with the provisions of NPA Regulation 2.

Start Once, Keep It Up

If a concern chooses to use a DO-97 rating even on a single occasion, it must then limit its MRO purchases in accordance with Regulation 4. Under this regulation, MRO purchases are limited in any one calendar quarter to one-fourth of the firm's dollar purchases for maintenance, repair and operating purposes in 1950 (or the fiscal year ending nearest to Dec. 31, 1950). If this quota is too

SELL UP
SIZE UP
with RHEEM

Rheem Reliable Dealer Program helps you sell for Bigger Profits!

The best way to step up your income these days is to increase your unit profit.

You can—with Rheem!

Rheem makes the most complete line of automatic water heaters in America. All sizes for all fuels—with planned quality and price levels for easy selling up.

All of Rheem's advertising, promotion and point-of-sale aids are designed to help you sell the bigger and better model ... the model that carries more margin for *you!*

Investigate the timely, money-making Rheem Reliable Dealer program *today!*

Rely on Rheem

World-famous for Automatic Water Heaters, Gas-Fired Heating Equipment, Domestic Tanks and Boilers, Steel Shipping Containers.

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small to provide sufficient MRO supplies, the firm may file with NPA an application for an increased quota. To provide for seasonal businesses, the new regulation permits quarterly MRO quotas equal to the amount spent by the business for MRO in the corresponding quarter of 1950, or fiscal year.

Businesses which were in operation only a part of 1950 are permitted a quota in proportion to the amount they spent for MRO while they were in operation, with reasonable adjustments for seasonable and other variable factors. New firms begun after Dec. 31, 1950, are permitted to acquire for MRO purposes the minimum amounts necessary for operation, up to $5000 a quarter. They must obtain special NPA authorization for MRO expenditures above this amount. Small businesses are permitted to extend DO-97 ratings for MRO purchases up to $1000 a quarter, without regard to the quota restrictions. When the quarterly quotas for these businesses exceed $1000, the NPA must be informed in writing of the base period used, the reasons for selecting it, and what adjustments have been made.

In all cases where DO-97 ratings are used, the firm is required to charge against its MRO quota all purchases made without use of the rating.

Government Body Experiments

The U. S. Bureau of Mines distillation laboratory at Bruceton, Pa., established to aid in the separation and identification of the products resulting from the synthetic liquid fuels processes being studied there, is described in a report released here by Secretary of the Interior Oscar L. Chapman.

Both the gas-synthesis and direct hydrogenation processes for obtaining synthetic liquid fuels from coal are studied at Bruceton on a laboratory and pilot plant scale. Besides describing the distillation laboratory, the report includes numerous drawings giving details of the various pieces of equipment.

A copy of report of investigations 5764, "Design, Construction, and Operation of a Distillation Laboratory for the Synthetic Liquid Fuels Program," by J. Feldman, Bureau organic chemist, and aides, may be obtained from the Publications Distribution Section, U. S. Bureau of Mines, 4800 Forbes Street, Pittsburgh, 13, Pa.

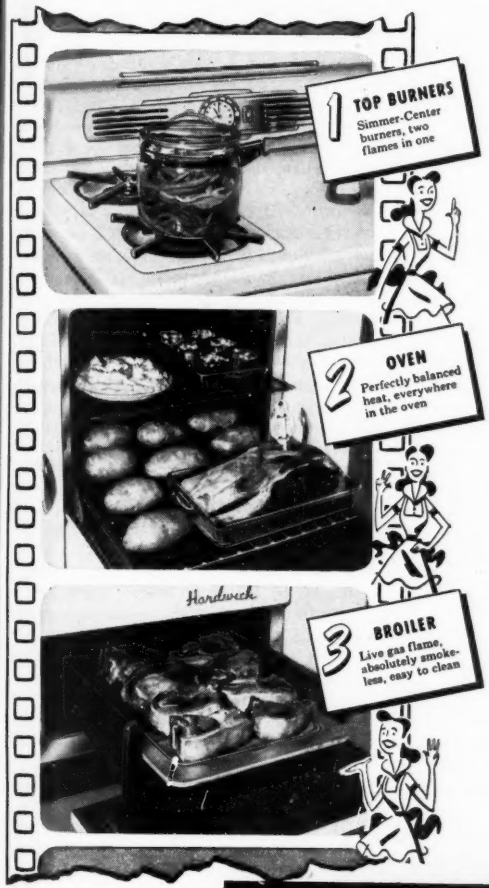
Monopoly?

Monopolistic use of exclusive-dealing and tying contracts in the sale or lease of propane gas cylinders is charged in a complaint issued here by the Federal Trade Commission against Insto-Gas Corp., Detroit. The complaint alleges that the corporation's practices violate Section 3 of the Clayton Antitrust Act.

In addition to selling or leasing cylinders for containing propane gas, the corporation also sells propane gas for filling or refilling the cylinders, as well as a line of related equipment, such as hoses, torches and furnaces. It is "among the largest" firms in the business, according to the complaint, and its products are used by painters, plumbers, electricians, and other craftsmen.

The complaint alleges that Insto-Gas sells or leases its cylinders on the condition, agreement or understanding that the buyers or lessees shall purchase from it, or its authorized distributors, all the gas used in the operation of the cylinders. The sale or lease of the cylinders also is conditioned, the complaint adds, on the further agreement that the buyers or lessees shall use with them only Insto-Gas appliances purchased

HARDWICK SELLING IS SIMPLE AS 1, 2, 3


1 TOP BURNERS
Simmer-Center burners, two flames in one
2 OVEN
Perfectly balanced heat, everywhere in the oven
Hardwick
3 BROILER
Live gas flame, absolutely smokeless, easy to clean

Not gadgets, not extras, but cooking performance. That's Hardwick's economy story in the national magazines. It's your story on the range priced to suit 8 out of 10 customers. Sell them by telling them—

"NO MATTER HOW MUCH YOU PAY— YOU CAN'T BUY BETTER COOKING PERFORMANCE"

HARDWICK
GAS RANGES

HARDWICK STOVE COMPANY • CLEVELAND, TENNESSEE

from Insto-Gas or from authorized distributors.

In furtherance of this policy, the complaint says, Insto-Gas imposes on its dealers and distributors the condition that Insto-Gas cylinders sold or leased by them shall be refilled only at filling stations authorized in writing by Insto-Gas. The dealers are further required, according to the complaint, to have the respondent company's cylinder lease agreements signed in triplicate by every customer to whom they deliver Insto-Gas products; to send a copy of such agreement to Insto-Gas within a reasonable time, and to deliver Insto-Gas cylinders only to customers having a cylinder lease agreement with Insto-Gas.

The effect of these arrangements, the complaint alleges, may be to substantially lessen competition between Insto-Gas and its competitors and to tend to create a monopoly in Insto-Gas in the leasing and sale of its products.

The company has almost a month in which to answer the charges, at a hearing to be held in April in Detroit, with Webster Ballinger, trial examiner, presiding.

Price Ceilings

Office of Price Stabilization officials and members of the Petroleum Industry Advisory Committee to OPS have met here to consider regulations to set up special pricing procedures for petroleum products.

The industry representatives supported a proposal to determine ceiling prices on sales at retail on a base period basis and to provide relief to sellers in certain hardship cases. OPS agreed to take the industry views under advisement.

Members of the industry committee attending the meeting included E. H. Collins, Esso Standard Oil Co.; George Hargens, Standard Oil Co.; R. F. Baity, Standard Oil Co. of Indiana; Ralph C. Cathcart, The Texas Co.; Jack W. Daker, Standard Oil Co. of Ohio; Newcomb Taylor, Hancock Oil Co.; Max Fisher, Aurora Gasoline Co.; W. S. Zehrung, Penzoil Co.; John Harper, National Oil Jobbers Assn.; Wylie Butler, Coastal Oil Co.; E. F. Wells, Ashland Oil & Refining Co.; H. L. Schwartz, Paragon Oil Co.; Roger Wilkinson, Socony-Vacuum Oil Co.; E. F. McCabe, Tidewater Associated; Albert Devere, Pathfinder Petroleum Co., and John Dressler, retail operator in New Jersey and New York, attending by special invitation of OPS. A. L. Nickerson, Socony-Vacuum Oil Co.; H. J. Kennedy, Continental Oil Co. and B. L. Majewski, Deeprock Oil Co., are members of the advisory committee who were not present at the meeting.

Oil from Shale

Secretary of the Interior Oscar L. Chapman has announced here that he is calling on private industry, with federal assistance under existing legislation, to establish promptly a synthetic liquid fuels industry based upon coal and oil shale. He made this disclosure in transmitting to the Congress a report on Bureau of Mines synthetic liquid fuels research in 1950.

The secretary pledged the "full support" of the Department of the Interior to "competent organizations or groups of organizations" offering sound proposals for undertaking commercial oil-shale operations. He added that Interior also will encourage the construction of one or two plants to produce synthetic liquid fuels by direct hydrogenation of coal. Regarding the other coal-to-oil process being studied by the Bureau of Mines—gas synthesis—he observed that more pilot plant and demonstration plant testing is necessary.

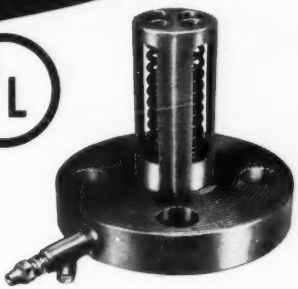
Citing increasing need for petro-

SHAND & JURS L.P.G. Valves listed by UL

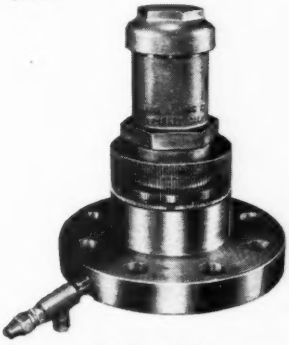
Tested—and proved—Shand & Jurs Internal Hydraulic Safety Valves for L.P.G. tank discharging are now listed by Underwriters Laboratories, Inc. This impartial stamp of approval comes from the foremost testing organization in the country, whose findings are accepted by every Fire Insurance company, Fire Prevention bureau and many courts.

What does this mean to the L.P.G. transporter? He can be assured that Shand & Jurs Internal Hydraulic Safety Valves for discharging L.P.G. tanks will provide real safety and dependability, preclude loss of valuable products through accidents such as collision or contiguous fire, and reduce L.P.G.'s chance of endangering operating personnel, the public and equipment. Contact the factory or the nearest S&J branch listed below for complete information on how to make L.P.G. tank discharging safe.

S&J



S&J Fig. 13810
¾" Internal Safety Valve designed expressly for discharging L.P.G. tanks. Can be opened only by S&J Operator which is a part of this system.



S&J Fig. 13800
2" and 3" hydraulically operated Internal Safety Valve designed for L.P.G. tank discharging.

Shand and Jurs Co. 917 CARLTON STREET · BERKELEY · CALIFORNIA

NEW YORK 295 Madison Ave. · CHICAGO 10409 S. Western Ave. · HOUSTON 814 M & M Bldg. · TULSA 310 Thompson Bldg. · LOS ANGELES 714 W. Olympic Blvd. · SEATTLE 3000 Western Ave.
FORT ERIE, Ontario · MONTREAL 360 Notre Dame St. · VANCOUVER 550 Beatty St. · DARLINGTON England

leum products in this country, the uncertain international situation threatening imports, and the heavy costs of discovering and developing new oil fields, Secretary Chapman said that prompt synthetic fuel development is essential as a safeguard.

He also stated that research conducted by private industry and the Bureau of Mines since 1944 makes it apparent that establishing the initial plants would involve little financial risk to the government or to industry. To neglect the initiation of a synthetic liquid fuels industry, he said, is "to close our eyes and mind to our resources at a time when they are critically needed."

Technological advances during the past year, Secretary Chapman said, have brought the mining and retorting of oil shale and the refining of shale oil to the point where pushing a program for utilizing this resource is "in the best national interest."

If the prices of aromatic chemicals continue to rise, he declared, the construction of one or two coal-hydrogenation plants will be "a most profitable business venture."

The four-volume report submitted by the secretary covers every phase of the Government's far-reaching synthetic liquid fuels research program. Separate volumes are devoted to the three sources of such fuels being investigated—coal, oil shale, and agricultural residues — and to studies aimed at increasing the nation's oil resources by developing more effective methods of secondary recovery of natural petroleum from stripper fields.

This study on "Liquid Fuels From Agricultural Residues," asserts that the pentose sugars "may be fermented to the liquid fuels butanol, isopropynol, acetone and ethanol, or they may be converted to furfural. Dextrose can be converted to the liquid fuel ethanol."

The National Production Authority has delegated to the Secretary of the Interior authority over the production and distribution of certain industrial chemicals used principally in the petroleum industry. The action (NPA Delegation 9) is in accord with an existing agreement between the NPA and the Petroleum Administration for Defense, under Interior.

The chemicals involved are traethyl lead fluid, petroleum cracking catalysts, special inhibitors used in gasoline, lubricating oil additives, and fluids and additives made especially for oil and gas drilling and demulsifiers.

Cylinder Steel Scarce

Representatives of the Compressed Gas Cylinder Industry Advisory Committee have met here to discuss with NPA officials the problems facing their industry during the accelerated mobilization program.

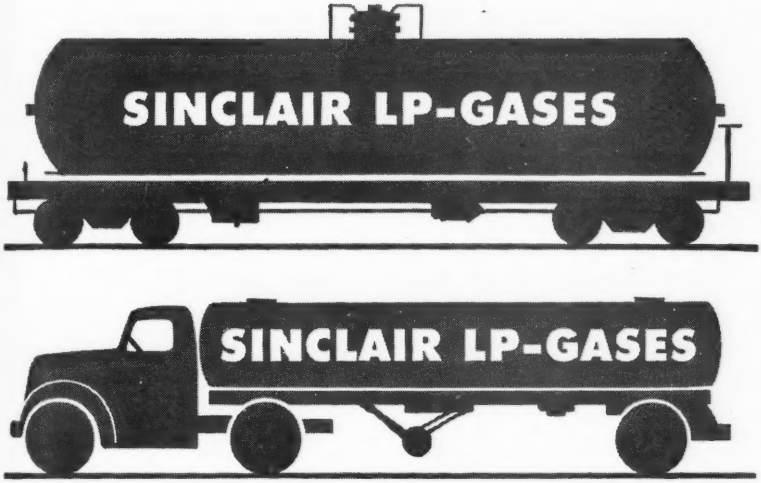
Committee members said that increasing demands for military orders have delayed steel shipments to them and in some cases have shut off their normal supplies completely. They also reported shortages of molybdenum, which is used in steel for high pressure cylinders.

NPA officials told the committee the molybdenum shortage is serious and suggested that cylinder producers use substitutes wherever and whenever possible.

If materials and labor were available, committee members said, they could expand production to World War II levels and possibly beyond that. Many of the committee members said they could double their present production without additional investment, if materials and labor were available.

Two task groups were appointed from the Advisory Committee to give more consideration to industry prob-

What makes these Vehicles so much ALIKE?



It's the "stowaway" that rides in every shipment of SINCLAIR LP-Gases from the refinery to the consumer. Packed into SINCLAIR LP-Gases is a Hidden Ingredient composed of important things like INTEGRITY, REPUTATION, RESPONSIBILITY, PERFORMANCE, and REAL SERVICE.

That is why consumers call for Sinclair LP-Gases. They know they get products of the highest heating value, expertly refined, with all moisture and impurities removed.

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lems and to make recommendations to NPA as to how these problems might best be alleviated. The first group, representing high - pressure cylinder producers, will study production problems with special attention to the chrome-molybdenum situation. The second group, representing low-pressure cylinder producers, will study steel specifications for low pressure cylinders and will submit recommendations as to essentiality of the various types of cylinders used in the civilian economy.

High-pressure cylinders, used by the military and industry, are for containing and compressing oxygen, helium and hydrogen. Low-pressure cylinders, primarily used in homes for liquefied petroleum gases, also are used in acetylene welding and refrigeration units.

Members of the Advisory Committee of interest to LP-Gasmen include R. G. Smith, Norris Stamping and Manufacturing Co., Los Angeles; H. E. Kirkpatrick, Delta Tank Co., Baton Rouge, La.; H. M. Reeser, Harrisburg Steel Corp., Harrisburg, Pa.; Kenneth Jobson, Linde Air Products Division, Union Carbide & Carbon Corp., New York; H. J. Wallace, National Tube Co., Pittsburgh; Norman Evans, Pressed Steel Tank, Milwaukee; A. V. Murray, Scaife Co., Oakmont, Pa.; A. H. Trageser, Trageser Copper Works, Inc., Maspeth, L. I., New York, and Albert J. Weatherhead, Jr., Weatherhead Co., Cleveland.

From LPGA's Washington Office

Howard D. White, executive vice president of the LPGA, who has been assigned to represent the association in Washington, D.C., under the direction of the group's Defense Advisory Committee, has established headquarters at 1111 17th St. N.W. (Telephone: Executive 2937.)

From Mr. White, through regularly issued bulletins by the association from the Chicago offices, come the following important reports concerning matters of direct interest to the LP-Gas industry:

Control of tank cars—The Interstate Commerce Commission Service Order, assuming control of supply and movement of railroad tank cars, designates Mr. Richard H. Lamberton, Room 5109, I.C.C. Building, Telephone Republic 7500, Extension 5161-5162, as the agent of the Interstate Commerce Commission with authority to control the movement of tank cars and carry out the Commission's directions.

This Service Order gives the Interstate Commerce Commission authority to regulate the use, control, supply, movement, distribution and exchange of railroad tank cars.

•

N.P.A. cut-backs on use of metals—N.P.A. has also announced that it will issue orders soon covering further cut-backs in the use of metals. The announcement states that the cut-back on steel in the manufacture of refrigerators and other consumer durable goods, starting April 1, will be reduced by 20% from the average quarterly use in the first half of 1950. In the third quarter of 1951, the cut-back from the same base period will amount to 30%. The use of copper for such products will also be cut-back in the second quarter by 25% from the same base period.

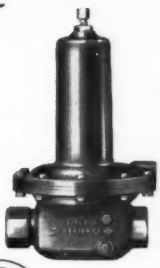
•

Nominations for an industry advisory committee, selected by LPGA's Defense Advisory Committee for geographic and size-of-business representation, have been submitted to P.A.D. with concurrence by N.P.A. However,

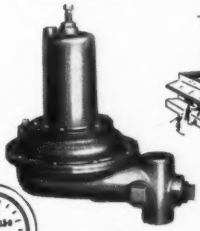
Silent Masters OF HIGH PRESSURE GAS

These High-Pressure Regulators are used by a large number of different industries. From the largest refinery to small industrial plants, they are always on the job, reducing high gas pressure to a low, steady flow of gas that can be utilized to the best advantage.

For complete specifications on High-Pressure Gas Regulators, request Bulletins 47A and 48A.



TYPE **HPR** is available in several models which allow inlet pressures up to 1000 lbs. (2000 lbs. in bronze) and reduces them to as low as 2½ psi. This wide pressure range, plus compact, rugged construction, makes this Regulator a natural for farm taps, general gasoline plant and refinery installations, and for controlling any high pressure gases.



TYPE **HPH** is recommended for smaller industrial plants where sensitive regulation and position lock-up are required. This Regulator may be used with inlet pressures up to 150 lbs. and the outlet pressures may be reduced to as low as ½ psi.

AMERICAN METERS

RELIANCE REGULATOR DIVISION

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National Petroleum Council, which has broadened its membership, including Peter A. Anderson and others, has requested that the Council membership be constituted an Industry Advisory Committee. Decision has not been reached.

•

The Defense Transportation Administration reports that 104 new LP-Gas tank cars were delivered in January; 200 were scheduled for February of which 100 were expected to be delivered. 362 for March of which 175 may be delivered. 110 are scheduled for April and 85 of these should be completed. Thus, on a reasonable fulfillment of schedules, a minimum of 464 new cars should be added to the fleet by May 1. More or less will depend upon available steel.

Approximately 1500 cars are on current order and P.A.D. has a car-building program under consideration.

•

A verbal interpretation of N.P.A. officials of the recent revision of Copper Order M-12 substantiates the earlier report that copper tubing may continue to be used for LP-Gas service connections.

The word "fixture" is interpreted as "appliance" so copper tubing may be used from the "tank" or container to the appliance. The words "high pressure LPG" were employed NOT to indicate that copper tubing could be run only to the regulator, but to distinguish the conventional type of domestic installation from any system in which LP-Gas is used for enrichment or peak shaving or in utility operations.

•

It has been learned that out of 8600 tank cars now planned for the petroleum industry, 1510 LP-Gas cars are scheduled for delivery by July 1. These, however, must be built, if possible, out of materials available before the Controlled Materials Plan of N.P.A. becomes effective. If they are not, or if they are insufficient, we will then have the privilege of applying for an allocation of material for the purpose.

•

Economic Security Administration proceeds to plan to roll back prices in some categories and present increases in others. Over-all action, however, is delayed pending organization of Industry Advisory Committees, and, more particularly, the settlement of salary and wage differences in W.S.B. Only present course for individual companies is to carry their problems direct to E.S.A.

•

The complicated and exhaustive display of material requirements for the industry provided by a sub-committee of the LPGA Defense Advisory Committee, was filed with P.A.D. and through P.A.D. with N.P.A. according to schedule. P.A.D. Materials Branch stated that this was the best job yet supplied to them by any industry branch. This effort will bear fruit for every department of the LP-Gas industry when the Controlled Materials Plan goes into action.

•

The LPGA Defense Advisory Committee is still working towards the hope of a separate division for LP-Gas in P.A.D. with a fully competent Director out of industry.

Legislative Notes

The 1950 edition of the NFPA Pamphlet 58 has been adopted by the state of Florida as the official regulations covering LP-Gas usage.

•

Kansas LP-Gas regulations, which were revised as of December, 1950,

Save Manpower . . . Use the Complete Line!

BS&B "Climax" CONTROLS

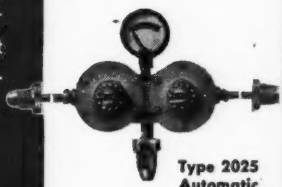
• You can profit from the proved reliability of the BS&B "Climax" Line. Sound design and high-precision manufacturing builds in long service life.

Interchangeable parts and simplicity mean easy repairs, right in the field. Fewer parts to stock and carry . . . more calls per day.

For all the facts about BS&B "Climax" Controls... the COMPLETE Line... write today.

Type 2020 Regulator

Type 2015 Regulator



Type 2025 Automatic Manifold

...pe 2015-C ...Lo Pressure ...mbination

BS&B "Climax"

BLACK, SIVALLS & BRYSON, INC.

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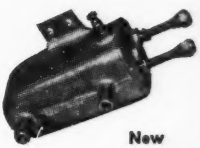
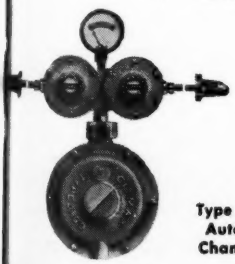


New Liquid Vaporizer



Type 2015-D Automatic Changeover

Type 2027 Tractor Conversion Unit

may be obtained from the State Fire Marshal in Topeka.

•

In California, Bill No. 1241 has been introduced into the senate to amend the present vehicle code so that after Oct. 1, 1952, all tank trucks, trailers, or semi-trailers transporting liquefied petroleum gas which have an external shutoff valve must also have a shutoff valve inside each tank.

•

A 3% general retail and consumer sales and use tax became effective April 1 in Georgia. The recent legislature, now recessed until January, 1952, passed the bill.

Motor Carrier Tariff Changed

A change in H. A. Campbell's Motor Carrier Tariff No. 7 relative to customer tanks is announced in a recent bulletin of the LPGA by John Knox Smith, field engineer for that organization.

Mr. Smith states that the LPGA's Technical and Standards committee initiated the suggestions which resulted in the changes mentioned. In the past, it has not been permissible for an installer of ASME or API-ASME containers to haul such containers to the consumer's premises if they contained any LP-Gas. Now, the ICC recognizes the need for partially charging such containers with LP-Gas prior to the delivery onto the consumer's premises, according to Mr. Smith, and has set up adequate safety standards therefor. These follow:

2. (Add paragraph (r) (i) (11), section 303, page 100 of Tariff, as amended in Supplement 24.)

(11) Storage containers for liquefied petroleum gas for permanent installation on consumer premises may be shipped via private motor carrier only under the following conditions:

(i) The containers shall comply with the construction requirements of one of the following pressure vessel codes and shall be marked to indicate compliance as specified in the code.

(ii) The 1950 Edition of The Unfired Pressure Vessel Code of the ASME no revisions.

(iii) The 1949 Edition of The Unfired Pressure Vessel Code of the ASME.

(iv) The 1943 Edition of the joint Unfired Pressure Vessel Code of the API and ASME.

(v) Each container shall be equipped with safety devices in compliance with the requirements for safety devices on aboveground containers as specified in the National Board of Fire Underwriters Pamphlet No. 58 "Standards for the Design, Installation and Construction of Containers and Pertinent Equipment for the Storage and Handling of Liquefied Petroleum Gases," 1949 Edition.

(vi) The containers shall be so braced or otherwise secured on the vehicle as to prevent relative motion while in transit. Valves or other fittings shall be adequately protected against injury during transportation. (See sec. 824 (a) (7).

(vii) Except as provided in subdivision (viii) of this subparagraph containers shall not be shipped when charged with liquefied petroleum gas to more than 5% of their water capacity.

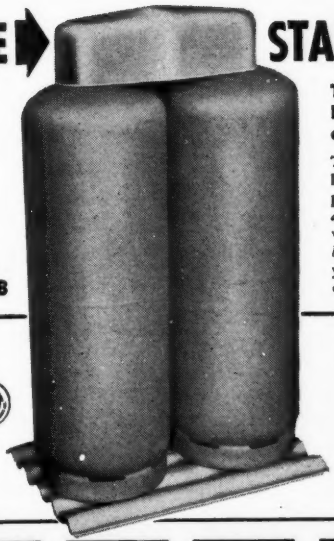
(viii) Storage containers of less than 1042 pounds water capacity (125 gallons) may be shipped when charged with liquefied petroleum gas in compliance with ICC filling density.

The Bureau of Explosives Issues H. A. Campbell's Tariff No. 8

The Bureau of Explosives issued about March 15 a new tariff entitled "H. A. Campbell's Tariff No. 8," which is a combination of Motor Carrier Tariff No. 7, containing the regulations of the Interstate Commerce Commission governing the transportation of explosives and other dangerous articles by motor vehicles, and Freight Tariff No. 4. The old tariffs will be cancelled and superseded and combined into the one tariff, No. 8.

A fee of $3.50 will be made for the combined tariff for a period of three years and will include all supplements issued thereto during that period.

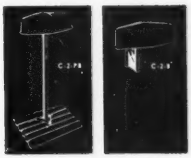
USE ➤ STAMPINGS HOUSINGS



THE C-2-PB

The line that can fill your needs for bottled gas housings . . . as it has for other leading distributors . . .

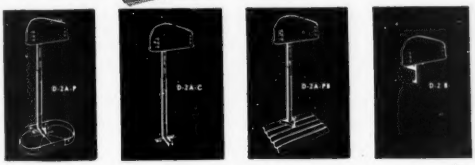
The *best* recommendation for any product is the repeat business it gets. Stampings is gratified by the many people in the bottled gas industry who *continue year after year* to use our products in their service. Because we appreciate this confidence, it is our aim to give the *best values obtainable* in bottled gas housings. Choose yours from the complete line shown below. Catalog on request.



THE C SERIES IN 2 MODELS

At left: The C-2 PB MODEL. Consists of hood, post and pre-fabricated base. Cylinder locater on post for fast, easy servicing. Easy, fast to set up. Designed especially for use with small and medium size regulators.

At right: The C-2-B MODEL. Consists of hood hinge-mounted on bracket. Attaches directly to the wall. Simple to install, easy to service. For use with small and medium size regulators.



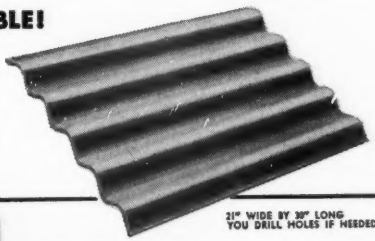
THE D SERIES IN 4 MODELS

FOR SINGLE CYLINDER WALL-MOUNTED

CAST ALUMINUM HOUSING WITH PRE-FABRICATED BASE

BASES ONLY-- NOW AVAILABLE!

This is exactly the same base that Stampings has so successfully used on its complete units. It is made of asbestos and concrete — a tough combination that stands up under weather and abuse. Corrugated surface provides drainage and ventilation. *Saves tanks, time and money.* Write for prices in various quantities.



21" WIDE BY 30" LONG
YOU DRILL HOLES IF NEEDED

THE HOUSE STAMPINGS OF BETTER HOUSINGS

STAMPINGS INC. DAVENPORT, IOWA • EASTERN SALES OFFICE 522-5th Ave., NEW YORK • Murray Hill 7-5523

Let Customers Know Your Problems To Get Best Cooperation

THE fuel shortage in some areas during the past winter, due to the switchman's strike and diversion by the government of many propane cars to other uses, prompted W. G. Petty & Son, Inc., Memphis, Tenn., to explain frankly the situation to all customers, with the hope of obtaining cooperation that would reduce hardship to the users and lay a foundation for a better future balance of the summer-winter loads.

The following letters show the approach made by the company and at least one evidence of appreciation by a customer.

Dear Customer:

The letter on the next page will tell its own story for emergencies to come.

But this letter is written to thank all of you for your cooperation during the emergency of the railroad strike. It has made it hard on all of us but with your kindness and thoughtfulness, we have gotten by with a minimum of hardship. I know you will be interested to know that out of 1042 customers, we had only 19 run completely out of gas. This is amazing, and it is due to your giving us the correct reading of your plant when you called in.

The employes in the office want to thank each of you for your understanding and patience when you called in—so near out of gas—and so cold outside. We have delivered what gas we had impartially, starting from the nearest out and up.

The letter on the next page will tell you why we won't deliver much gas in March as we want your tank to be as near empty as possible to start the summer months.

Yours very truly,

W. G. PETTY & SON, INC.
By W. G. Petty, Jr.

Dear Customer:

This letter is very **important** to you. Please read it very carefully.

In our territory, 90% of butane gas is used in the winter for heating, as the cooking and hot water heating during the summer use very little gas. The refineries say this is out of proportion; especially during the emergency facing us. They will not have adequate railroad cars for delivery to us, on this ratio. So, they are putting us on this basis: They are dividing the year into 2 classes; 6 months summer and 6 months winter. The 6-month summer is from April 1 to Oct. 1; winter months from Oct. 1 to April I. They are putting us on a 1 to 1½ ratio, which means you can get 1½ times as much gas during the winter months as you get during the summer months.

Let's make it plainer still. If you buy 300 gallons of gas from April 1 to Oct. 1, then you could buy 1½ times 300—which is 450 gallons—during the winter months, or a total of 750 gallons for a year. If your plant would hold 800 gallons during the summer months, then you could buy 1200 gallons during the winter months, or a total of 2000 gallons for a year. For this reason we would like all plants to be as near empty as possible by April 1, so you can get a good start on your summer gas.

Let's take one more example. If you have a small plant, say, a 200-gallon plant, you used 900 gallons of gas last year, and you only buy 200 gallons of gas during the summer, this would give you 300 gallons during the winter or a total of 500 gallons of gas, which would not take care of you. In this case you would have to put in a larger plant, or arrange for some auxiliary heat to help you through the winter.

Most of you know approximately how much gas you use during a year, and how much you would have to buy during the summer to fill your requirements. If you do not know, call or write us and we will send you the amount you purchased last year. This way you can break it down and see if you have enough storage for your requirements.

Many of you will not be affected by this at all as you have always let us fill your plants during the summer and do have large enough storage. We are trying to put our cards face up on the table, so you can understand our position. We want to co-

NEW SUPERIOR TANK UNIT

Alert outfits like Mercury are ordering and re-ordering Superior Tank Truck and Trailer Units to insure dependable, economical fleet operation for years and years to come.

Prompt Delivery!

Superior Still Has

Steel!

Despite material shortages, we are still able to make prompt delivery on light weight, high tensile strength units built to exacting specifications.

SPECIFICATIONS

Shell—19/32" A-212 Grade "B" Firebox Steel
Heads—5/16" A-212 Grade "B" Firebox Steel
Working Pressure—250 lb. API-ASME Code
X-Rayed—Stress Relieved—Sand Blasted

TRUCK CAPACITY AND WEIGHT
Gross—3764 Gallons
87%—4342 Gallons

TRAILER CAPACITY AND WEIGHT
Gross—4991 Gallons
87%—3274 Gallons

COMBINED CAPACITY AND WEIGHT
Gross—8755 Gallons
87%—7616 Gallons

Let us figure YOUR job—right now!

SUPERIOR TANK AND CONSTRUCTION CO

SUPERIOR TANK AND CONSTRUCTION COMPANY

6155 S. EASTERN AVE. • LOS ANGELES 22, CALIF.

operate with you and give you the best possible service under whatever emergency faces us.

Thank you for your past confidence and cooperation.

Yours very truly,
W. G. PETTY & SON, INC.

Lucy, Tenn.
Feb. 19, 1951.

Dear Mr. Petty:

I think these nice letters of explanation deserve a reply.

You and your employes have always been most accommodating and efficient in service to me since our very first deal when you installed the gas heating system.

I know you to be one who is loyal to customers and very generous in patience with the public.

I have confidence in your advice and shall expect you to continue to take care of filling my tank when it is convenient for you to do so.

I shall be as prompt as possible in paying you and assure you appreciation for all courtesies extended me.

Yours very truly,
(Mrs.) Martha S. Williams

Frey Bros. to Serve Motor Vehicles from New Plant

Frey Bros. Modern Equipment, Inc., of Michigan City, Ind., has expanded its operations to include service to highway vehicles and to distribute LP-Gas on a wholesale basis. A new 18,000-gal. bulk plant and bottling facilities for filling 20- and 100-lb. cylinders will keep dealers in the surrounding territory supplied with fuel.

According to Vice President Harry Frey, his company expects to offer a highly convenient service to over-the-road haulers operating on LP-Gas inasmuch as the company station is located just one block from a heavily traveled east-west highway.

The company has been handling bottled gas since 1938 and serves approximately 1000 users in the Michigan City area. In addition to gas, Frey Bros. carries a complete line of domestic appliances.

Addition to NFPA Pamphlet 58 Covers Trailer Camp Transfers

A revised Pamphlet 58 was issued in January by the National Fire Protection Assn. incorporating new text dealing with fueling operations at trailer parks.

Copies are available from the NFPA at 60 Batterymarch St., Boston, Mass.

This January, 1951, revision is the same as the October, 1950, edition except under Paragraph 6.11 (General Precautions), a paragraph is inserted as follows:

"No container shall be filled without the consent of the owner thereof"; and the addition of Paragraph 6.12 (Filling of Containers). This reads as follows:

(a) Containers shall be filled in accordance with B. 16 (a) and one of the following:

1. At a properly equipped container filling plant which complies with all applicable requirements of these standards. Such filling plant may be located in a trailer camp provided that the entire filling operation, including the storage container is located not less than 50 feet from the nearest trailer, important building or group of buildings, or line of adjoining property which may be built upon, and not less than 25 feet from any public street or highway. Such filling plant and storage container shall be enclosed by manproof fencing or otherwise protected from tampering or physical damage. The access to the enclosed area shall be kept locked when unattended.

2. From a tank truck complying with the provisions of Division III. Containers installed at the trailer may be filled at that location. Other container filling locations shall be not less than 25 feet from the nearest trailer, important building or group of buildings or public street or highway, whenever more than 3 containers are to be filled or the total gas capacity of the container or containers to be filled exceeds 100 pounds at one location. Private streets, private roads, or private rights of way shall not be termed public streets or highways. No vapor or liquid shall be vented to the atmosphere during the filling operation. The container filling operation shall only be performed by qualified personnel and during daylight hours.

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LP-GAS PROMOTIONAL
program

Your Guide to the best in modern automatic cookery.

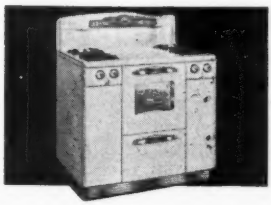
Meet the TAPPAN "GLAD GIRL"

PUT HER TO WORK FOR YOU DURING TAPPAN NATIONAL DISPLAY WEEK

MARCH 31 — APRIL 9

● Here's a promotion that really sings of spring . . . a gorgeous girl . . . flowers . . . and a beautiful Tappan LP gas range! The Tappan "Glad Girl" will be greeting more than 20,000,000 American homemakers in the April issues of their favorite farm magazines such as FARM JOURNAL and SUCCESSFUL FARMING—plus BETTER HOMES AND GARDENS (full-color page) . . . THE SATURDAY EVENING POST (March 31) . . . LADIES' HOME JOURNAL . . . WOMAN'S HOME COMPANION . . . SUNSET.

Put this Tappan "Glad Girl" to work for you! Tie in with Tappan's continuous advertising program and National Display Week—and you'll make profitable LP sales. A wire or phone call to your Tappan representative will bring you a sales promotion plan especially designed for LP dealers.



THE TAPPAN STOVE COMPANY
Mansfield, Ohio

Products

PEERLESS UNIT HEATER

Suspended Heater

Peerless Manufacturing Corp., 14th & Ormsby, Louisville, Ky.

Model: Peerless fan-type gas unit heaters.

Application: Adaptable to any size building from large factories to small stores.

Description: Made in five sizes, 65,000 to 200,000 Btu input, the heaters are AGA-approved for use with LP-Gas, natural, mixed and manufactured. Hangers are standard pipe size welded to heating unit assembly. The oblong shape of the flue connection affords minimum unit height with maximum clearance under heater. Heavy gauge steel heat exchanger tubes are utilized.

Other features include: Fan, with four overlapping blades; access doors on each side panel; dual pilots (smallest model has single pilot); thermal limit control inside cabinet which shuts off gas to burner should unit exceed safe temperature limit; burner and pilots mounted on hinged pan; pressure regulator; manifold assembly with all controls rigidly mounted; safety controls. The cabinet is cold rolled steel finished in baked-on, tan wrinkle finish.

Melting Furnace

Acetylene Supply Co., 1900 E. Elizabeth Ave., Linden, N. J.

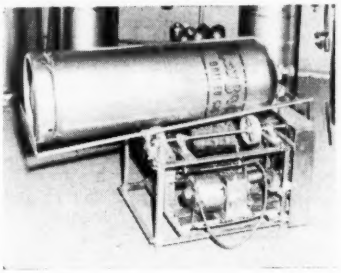
Model: ASCO A-1.

Application: Used by plumbers, pipe fitters, tinsmiths, roofers, electricians

ASCO MELTING FURNACE

and mechanics for melting lead, babbitt, zinc, paraffin, tar and asphalt.

Description: The furnace can be used with any standard 20-lb. ICC tank equipped with flange-type vertical valves. Specially designed for propane, the melting furnace now has a venturi-type burner which affords better mixing of the gases, is less affected by strong cross drafts, and provides safe, clean, and economical heat. Accurate flame control is provided by adjusting the cylinder valve.



LEWISTON PRINT-O-MATIC

Name-Painting Machine

Lewiston Bottled Gas Co. (Romeo Herow), 169 College St., Lewiston, Maine.

Model: Print-O-Matic.

Application: Designed to paint trade name on two sides of cylinders.

Description: Operation of the machine is as follows: A revolving roll picks up paint from a pan. The roll has an adjustable knife blade that leaves the correct thickness of paint for the printing roll. Cylinders are wheeled in front of the machine. The cylinder is raised and falls into a horizontal position over the machine, in which position the painting operation takes place. After painting, and by lifting lever of loading platform, the cylinder drops in a standing position in front of the machine.

It requires 2 2/5 seconds to make a complete cycle, in which time two neat trade names are painted on the cylinder. One quart of paint will do from 1100 to 1500 cylinders. The Lewiston Bottled Gas Co. has been using the machine for over a year. They found that paste, although giving a better appearance, cuts down production to 400 cylinders per quart and requires more aluminum paint to cover when repainting. It was also found that paste costs approximately four times more than paint.

Hand Truck

Clark-Hopkins Equipment Corp., Philadelphia 23, Pa.

Model: Lift Stacker

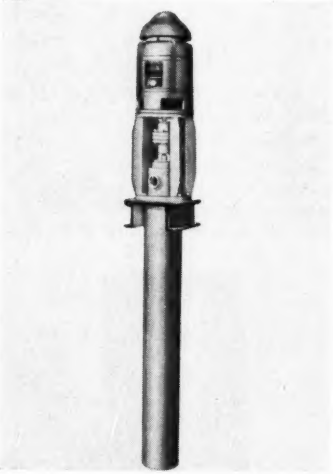
Application: Designed to fill the need for a small, light weight, highly maneuverable hand-truck that will enable one man to load and stack heavy

CLARK-HOPKINS HAND-TRUCK

merchandise, after transporting from one location to another.

Description: Compact, sturdy construction is featured. The unit weighs 111 lbs., has a capacity of 500 lbs., and will lift these loads to tail-gate height of 54 in. The platform is 22 by 19 in. for accommodating larger size packages. The front of the platform is flush with the floor when lowered. It is equipped with 8-in. rubber wheels.

Bulletin No. P-1, describing the truck, is available upon request to the manufacturer.



BYRON JACKSON PUMP

Vertical Pump

Byron Jackson Co., P. O. Box 2017 Terminal Annex, Los Angeles 54.

Model: BJ Type VLT.

Application: For general industrial installations.

Description: Because it incorporates a BJ mechanical seal, the manufacturer states that the pump is well suited to the handling of butane, propane, gasoline, etc.

The Type VLT is a small, standard, vertical pump furnished with pipe tap suction and discharge nozzles, Type U mechanical seal, and standard materials. It is built in one barrel size, in which either an open or closed impeller bowl assembly can be installed. By omitting the barrel, the unit is suitable for sump or tank pump service. The barrel is constructed of 6-in. standard pipe, flanged at the top for connection to the nozzle head. A motor flange is provided to receive solid shaft motors from 1½ to 10 hp at 3550 rpm. An adjustable flanged type coupling is supplied to permit easy and accurate lateral adjustment of impellers.

The pump has a maximum working pressure of 350 psi, a maximum pumping temperature of 250°F, and a maximum capacity of 100 gpm.

Piping Dimensional Data Card

Dimensions on welding fittings and flanges that could otherwise be found only by searching through many catalog pages and tables have been condensed and reproduced by Taylor Forge on two sides of an 8½"x11" card.

One side covers the broad "Weld-ELL" line of Taylor Forge welding fittings. It shows the wall thickness and the essential dimensions for all types of fittings for every nominal pipe size from ½" through 30".

The other side covers forged steel flanges. The essential dimensions and bolting data are given for all types of flanges, in all weights, for nominal pipe sizes from ½" through 24".

Other useful information for piping engineers is also given on the card.

The cards are varnished on both

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Here's the De-Luxe Single Barrel Truck Tank that's easy to handle and gets there in a hurry. Eveready is very popular throughout the industry.

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sides to enable them to withstand prolonged use.

Cards are available, upon request, to anyone concerned with piping problems or applications by writing to Taylor Forge & Pipe Works, P. O. Box 485, Chicago.

Product Information

"Metal-Cal," a new permanent identification device for applying trade names, trade marks, insignia, numbers, specifications, dealer service nameplates, diagrams, instructions, operating or maintenance directions, dial and gauge markings, is now available from the C & H Supply Co., Metal-Cal Div., Boeing Field, Seattle, Wash.

A new brochure (available upon request) sets out the advantages, limitations, sample usages, method of application, and test reports on the product. Metal-Cals consist of a .003-in. thickness of aluminum foil anodized and dyed to rigid specifications. They are backed with a high tensile bonding material and can be applied quickly to any smooth, cohesive surface on metals, porcelain, bakelite, polysterene, glass, wood, paints, or enamels.

Heating Bulletin

A new eight-page bulletin, SC-150, on heating and heat treating equipment for defense production, has just been issued by Surface Combustion Corp., Toledo 1, Ohio.

Printed in three colors, the bulletin covers heating for forging as well as heat treatments to develop the required properties for the production of all kinds of ordnance material. Among the items covered in the bulletin are ammunition, guns, tanks, aircraft, and ships. The production of engines, power transmission equipment, tools and special parts is covered. Copies of this illustrated bulletin are available by writing to Surface Combustion.

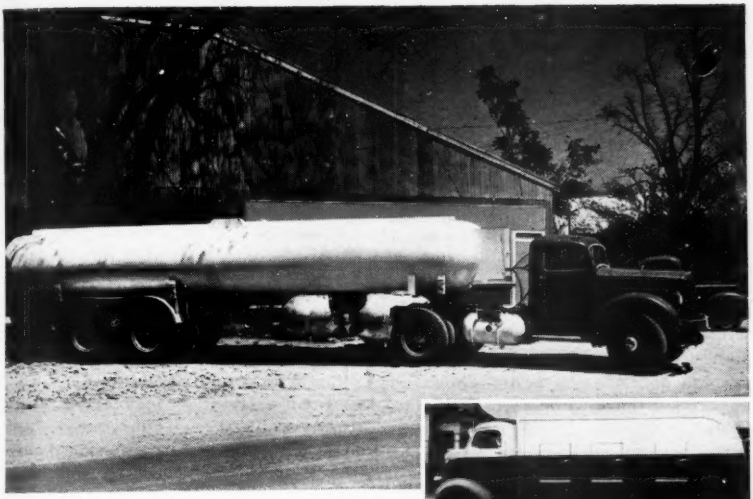
Industry Promotional Campaign Stresses "Carefree Cooking"

"Merchandising kits" containing a variety of direct-mail, newspaper and radio advertising materials were mailed out early in March to nearly 9000 LP-Gas dealers to help them tie in their local efforts with the theme of the National LP-Gas Promotional Program, according to Lee A. Brand, chairman of the industry committee in charge of the venture. "Carefree Automatic Cooking Comes to Stay with Dependable LP-Gas" is the keynote of the current campaign —both at the national and the local levels.

The program's third round of publication advertising has been appearing in 48 national, regional and state magazines reaching upwards of 24,500,000 readers who live principally in farm, small town and suburban areas.

The new "merchandising kit," which is the third of its kind to be released since the inception of the industry-wide promotion, offers dealers selling tools they can readily adapt to their local requirements by the simple expedient of imprinting company and brand names and other necessary information. Contributing members of the program buy these items at a 20% discount. Radio "spots" and "pattern" press releases included in the mailing are free.

Copies of the recently announced consumer booklet, "How to Enjoy Better Living Right Now," produced by the National Committee for LP-Gas Promotion for sale in bulk to industry companies for imprinting, are still available.



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U. S. Giant L.P.G. Hose is also used (1)—for discharge from outlet to tank; (2)—for return vapor recovery from truck to storage tank outlet; (3)—from the truck to farm or oil field service storage tank.

United States Rubber Company engineers can solve practically any type of hose problem you may encounter.

For more detailed information, please write to address below

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UNITED STATES RUBBER COMPANY

MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

Dependable Heat in Zero Weather Insures Success of Brooder Project

By ESTHER A. SELKE

ONE of the most interesting uses of LP-Gas in North Dakota is the experiment at the Marc A. Christianson farm, one mile north of Bismarck. He is helping to inaugurate a broiler industry destined to supply the Pacific Northwest in its large demand for broiler chickens. This is particularly vital now that so many new defense plants and workers have flocked to the Pacific Coast to again swell the population there to boom proportions. (First reference to this project in January BUTANE-PROPANE *News*.)

Armour and Co., meat packers who have large representation in the Midwest area, are sponsoring this experiment in raising broilers under ideal conditions at the Christianson farm and expect by spring to have many other farmers engaged in the same industry. Mr. Christianson reports that Armour has given him a great deal of help in bringing the project to its present success. Mr. Christianson sells his product only to Armour in return for the valuable aid given him in initiating the setup for this area.

Modern brooding methods with LP-Gas are practiced on the Christianson farm near Bismarck, N. D.

Mr. Christianson's chicken house is 112 feet long and 30 feet wide. In it he has 3500 tiny chicks in A. R. Wood 6-foot brooders. The chicks were sent to them from the Cornbelt Hatcheries at Joliet, Ill. The brooders run down the center of the chicken house and are supplied with heat by LP-Gas from a tank outside by means of pipes running through the brooders. The gas, which is supplied by the Main Gas Co. of Dakota at Bismarck, supplies all the heat for the venture. The brooders, eight in all, are the only heat in the building (although Mr. Christianson did use an oil space heater for a few days).

The birds at the time the snapshot was taken were 5 weeks old and were coming along very nicely. The mortality rate has been satisfactorily low despite weather which at times has run to 20° below zero, with extremely high winds. The room temperature has been good enough, and is held around 70°, the area under the brooders being held constant from 90° at first down to 65° for five-week old chicks.

The tiny chicks were first put into the middle of the building, underneath the heated brooders and between two sheets of tar paper. As they grew, the tar paper was taken away and the brooders were gradually

raised higher. At the end of 11 weeks the chicks will weigh about 3 pounds, the average broiler weight.

The dirt floor of the building is covered with ground corn cobs, which are swept out when the chickens mature and replaced with another corn cob cover.

The 1000-gallon capacity gas tank supplies the gas brooders by a rubber hose to each brooder from an overhead pipe and, incidentally, heats 3360 square feet of space (sufficient for 3500 chicks) and heat for the Christianson home, as well as all the needed hot water. As yet the Christiansons are unable to give costs of heating as they are now awaiting a meter to determine the heat costs in the broiler building.

The windows of the chicken house are so arranged that no draft reaches the chicks, all ventilating being done by dropping the tops of windows. Mr. Christianson plans to raise four broods annually.

The chickens will be marketed through Armour Creameries, of Bismarck. E. R. Woodcox, manager of the Bismarck Armour Creamery, has been the moving spirit behind this effort to restore North Dakota to its pristine position as the outstanding chicken raiser of the U. S. Mr. Woodcox hopes for at least another dozen or more similar broiler raising projects in the "Slope" area of North Dakota. Armour would like to have a supply of roughly 5000 birds a week and for 52 weeks of the year. The Christiansons plan to double their present 3500 capacity this coming summer in the broiler raising category.

Of late years North Dakota has been superseded by Georgia, Delaware, and Maryland in raising broilers, but Mr. Woodcox and Mr. Christianson, as the pioneer breeders, hope to have North Dakota rival these states soon. In this work LP-Gas will play a big part, for North Dakota winters are severe and chicken houses demand the ideal heat, best furnished by propane.

Suburban Propane Celebrates Fifth Anniversary

The fifth anniversary of the merger of Suburban Propane Gas Corp.'s seven outlets and Phillips Petroleum Co.'s 13 eastern districts was celebrated recently in Asbury Park, N. J., by a three-day program.

The company's expansion since 1945 has been mainly along. the Eastern Seaboard but recently acquisitions in Dover and Barnesville, Ohio, marked the firm's move westward. The properties acquired by January, 1951, have increased the customer count to nearly 170,000, each using approximately 55 lbs. of fuel monthly. Gas sales in 1950 totaled 124 million pounds. The automotive fleet has grown from 253 to 475, and 550,000 gals. of plant storage have been added in the five-year period.

The company is headed by Mark Anton as president and R. Gould Whitehead.

Registration Fee Set For South Eastern School

A registration fee of $32 has been set for the South Eastern LP-Gas Service School which will cover tuition, room, and board. Dates of the school are June 11-15 at the Southern Technical Institute, Chamblee, Ga.

For further information, write Robert E. Eskew, acting coordinator of short courses and conferences, Georgia Institute of Technology, Atlanta.

Carburetion Fundamentals

By F. E. SELIM*
Sales Department, Phillips Petroleum Co.
Bartlesville, Okla.

TO anyone having a basic knowledge of how gasoline carburetors operate, the subject of LP-Gas carburetion should be very simple. However, before discussing the operation of LP-Gas carburetors it is well to briefly review the operation of spark ignition type engines.

Before any spark ignition engine can run there are four things which it must have. They are: 1. Compression. 2. Proper timing. 3. Correct mixtures of fuel and air. 4. Spark.

Any time all four of these are in their proper proportion an engine will start and develop power. How well an engine performs is determined by how well these four important factors are used and controlled.

The three basic factors which determine power output and economy of any engine are: 1. How much air can get into it. 2. How well the fuel is proportioned to the air and mixed with it. 3. How well it utilizes the heat generated when the fuel-air mixture is burned.

It may be somewhat startling to say that the power developed by an engine depends on how much air gets into it, but nevertheless it is the basic factor. Fuel can only be burned when it is mixed with air (or oxygen) and ignited. The amount of fuel which can be burned depends upon how much oxygen there is available.

In order to completely use up the air taken into an engine it must have the correct amount of fuel and complete mixing of the air and fuel. This is the function of the carburetion and induction system. It is the purpose of this paper to try to explain how an LP-Gas carburetor system proportions the fuel to the air entering an engine. Figure 1 shows a comparison of a gasoline and an LP-Gas carburetion system. The gasoline system is on the left and the LP-Gas system on the right. In the gasoline system fuel is moved from fuel tank to the carburetor bowl by means of a fuel pump. In many of the farm tractor systems in use today the pump is eliminated by mounting the fuel tank above the carburetor so that fuel will flow by gravity from the tank to the carburetor bowl. However, I believe the similarity between the two fuel systems is easier to see when we stick to a gasoline system using a fuel pump.

The amount of gasoline entering the carburetor is controlled by a

*A paper delivered at the Kansas State LP-Gas Engine Fuel Service School, Manhattan, Kan.

float whose sole purpose is to maintain a constant liquid level of fuel in the carburetor bowl. This liquid level is slightly below the tip of the fuel jet so that no fuel will flow into the induction system when the engine is not running.

The particular carburetor shown is of the down-draft type so that air would enter the carburetor from the top and pass out of it at the bottom to the right into the intake manifold.

All carburetors make use of the venturi principle in order to measure the air entering the engine. The venturi is simply a section of the air pipe which is reduced in size so that air passing through the venturi must speed up. As the air entering the engine passes through the venturi it must speed up, which in turn reduces its pressure. If the venturi is of the correct size and shape, it offers very little resistance to air flow.

The engine, of course, is the suction pump pulling air through the system and the throttle is simply

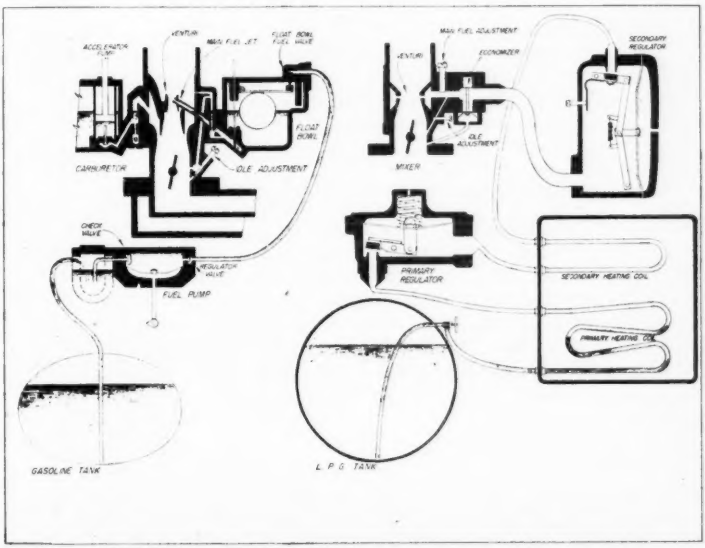

Fig. 1. Comparison chart of American Liquid Gas Corp. showing (on left) gasoline carburetor and (on right) propane carburetor.

a device to control the amount of air the engine can get. The reduction in pressure of the air at the venturi is proportional to the volume of air passing through it so the reduction in pressure can be used to control the amount of fuel let into the air stream and to hold the amount of fuel supplied at a constant ratio to the amount of air passing through the venturi. In the case of the gasoline carburetor in Figure 1, as the air flows through the venturi its pressure is reduced enough that the difference in pressure between the venturi and the carburetor bowl draws fuel through the main jet into the air stream. The pressure difference between the carburetor float bowl and the venturi will depend upon the velocity of air flowing through the venturi and this in turn will determine how much fuel flows through the main jet. This is the basic principle of all liquid fuel carburetors.

The Idling Problem

Under idling conditions the volume of air flowing through the venturi is so small and the pressure reduction at this point so slight that little or no fuel will come through the main jet. Therefore, it is necessary to add a special device to supply fuel during idling.

When an engine is idling the throttle is almost closed so that the passage between the throttle and the side of the air horn is very small. This means that air going past the throttle at this point must go at very high velocity. In turn, this means that the pressure at this point is very low so that if a small opening is provided at this point with a connection back to the carburetor float bowl fuel will be forced up through this passage and into the air stream at the opening at the throttle. A small needle valve or jet installed in this passage will then control how much fuel can get through the opening so that fuel-air ratios under idling conditions can be controlled. As soon as the throttle is opened even slightly the air velocity past this idle opening will be so low that no fuel will be drawn up through this passage and the fuel will then be supplied through the main fuel jet.

How LP-Gas System Functions

In the LP-Gas system on the right, it should be remembered that the fuel in the storage tank is under pressure. If we ignore, for a moment, the heat exchanger and assume that vaporized fuel is taken out of the fuel tank it can be seen that the primary regulator serves the same function as the fuel pump in the liquid systems in that this primary regulator furnishes fuel under a controlled pressure to the secondary regulator which serves the same function as the float bowl in the liquid carburetor. The secondary regulator maintains a constant pressure on the fuel lines going to the carburetor just as the float maintains a constant level of liquid in the fuel lines going to the carburetor in the liquid system.

In the LP-Gas carburetor there is a venturi just as there is in the

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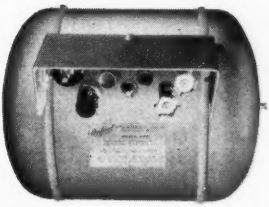

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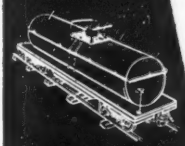

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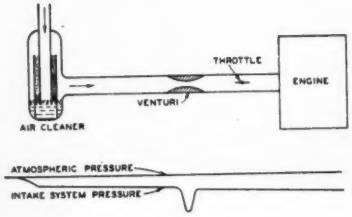

Fig. 2.

liquid carburetor and air flowing through this venturi behaves in exactly the same way. As the air velocity increases, the pressure at the venturi decreases and as soon as the pressure at this point is lower than the gas pressure leaving the secondary regulator, fuel will flow from the secondary regulator into the air stream.

In all of the systems on the market the secondary regulator will have an outlet pressure slightly below atmospheric pressures so that no fuel will flow unless the engine is running. As the air velocity through the venturi increases, the difference in pressure between the air at the venturi and the gas at the secondary regulator will increase so that fuel flow from the regulator to the venturi will increase. In this way the fuel flow is maintained at the proper ratio at all engine speeds and throttle openings.

Just as in the case of the gasoline carburetor the pressure drop at the venturi when an engine is idling may be so low that no fuel would flow from the secondary regulator to the venturi. In this case it is necessary to add an idling arrangement which works exactly the same as the idling arrangement in a gasoline carburetor.

Figure 2 is a schematic drawing of an intake system showing a heavy-duty air cleaner such as those normally used in farm tractors. Air enters the cleaner through the center pipe, bubbles through the oil container and then goes upward through the packed element, carrying some oil with it. The heavier particles of dirt are thrown out of the air when it makes the sudden turn in the oil filter. The fine particles of the dirt and the oil are removed in the packed portion of the cleaner and the oil tends to wash the dirt back into the sump, preventing the packed section from becoming clogged. The air then makes another sudden turn into the outer section and finally into the intake pipe to the engine.

Venturi Measures Air Volume

Before the air enters the engine it passes through a venturi which measures the volume of air going through it. As stated before, the engine is the suction pump pulling air through the system and the throttle is a device to control the amount of air the engine can get. As the air passes through the small section at the venturi it speeds up and thereby the pressure is reduced. This reduction in pressure is illustrated by the pressure curve at the bottom of Figure 2.

Figure 3 is a simplified drawing showing the final gas regulator attached to the air system shown in Figure 2. Here you can see how

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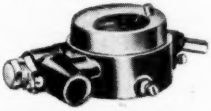
MODEL "UT-2" VAPORIZER AND REGULATOR
Combines two stages of regulation . . . primary and secondary, with vaporizer interposed. Compact in design for ease of installation.



MODEL "M" ADAPTOR CARBURETOR
Designed to fit in air cleaner to carburetor air pipe, by means of hose and clamps. Permits use of factory equipped gasoline carburetor and governor hook-up.

"Profit-Wise" dealers all over the country are taking advantage of Roadmaster's quality and performance features to set amazing sales records.

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the pressure reduction at the venturi (or the increase in suction) is used to meter fuel into the air system. The increased suction at the venturi is transferred back through the fuel line. With a constant pressure at the final gas regulator outlet the difference between this pressure and the pressure at the venturi forces fuel through the gas line to the venturi. With increased gas flow the final regulator will open farther in an attempt to hold its outlet pressure constant.

It is essential that the pressure at the inlet of this final regulator be constant just as it is essential in the gasoline carburetor that the fuel pressure at the float valve be constant if control is to be accurate. Thus, a regulator must be used between the supply tank and the final regulator to reduce the tank pressure to some constant pressure at this point. In other words, the primary or first stage regulator serves the same purpose of the pump in a gasoline system and the fuel line and adjusting screw serve the purpose of the jet in the gasoline carburetor.

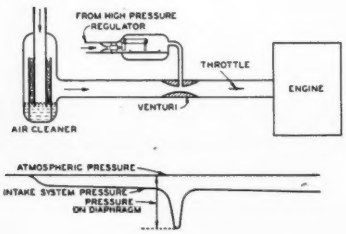

Fig. 3

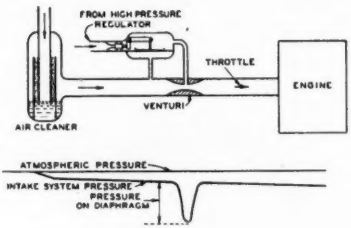

Fig. 4

Figure 4 shows how a balanced regulator is connected. It should be obvious that there is always some restriction to air flow through an air cleaner. If this restriction were always constant it could be compensated for in the main fuel adjustment but it does not remain constant. As the cleaner fills up with the dirt, this restriction will increase; if too heavy an oil or too much oil is used in the cleaner, resistance to air flow will increase. As the oil changes in temperature, its viscosity will change, which has this effect: as the oil is sucked up into the packed section its resistance will also change.

As indicated on the pressure diagram below the sketch, the total difference between atmospheric pressure and the venturi pressure will work on the regulator diaphragm in an unbalanced regulator. However, when the opposite side of the regulator diaphragm is connected to the air intake pipe, the varying restrictions at the air cleaner are neutralized, and only the pressure drop at the venturi will work on the regulator dia- effect of the pressure drop through the air cleaner will be eliminated

as far as its effect on the final regulator is concerned.

Engines will operate satisfactorily without a balanced regulator if the air cleaner is serviced regularly and correctly, but if close control of air-fuel mixtures is desired at all times, a balanced regulator should be used. If the air cleaner becomes partially plugged in an unbalanced system the fuel mixtures may become so rich that the engine will not run. In a balanced system the result would be a reduction in the amount of air the engine could get and a consequent loss of power but there would be no change in the air-fuel ratio.

Carburetion Systems Vary

The point at which the balance line connects into the air stream varies with various carburetion systems available. In some the connection is ahead of the choke as shown in these slides. In others the balance connection is beyond the choke. In this case it is necessary to use a bleed in the balance line to get any choking action. This is simply a small hole which allows some air to enter the lower diaphragm chamber when the choke is closed so that its pressure will be above that of the upper chamber to cause the diaphragm to lift and let the fuel flow.

Unfortunately it is difficult in all types of regulators to maintain the final stage outlet pressure constant and at the same time get the desired air fuel ratios at part throttle and at full throttle.

You all know that many gasoline carburetors use compensating (or high speed) jets and idling jets in addition to the main jets. This is done because of the fact that the single jet carburetor tends to give lean mixtures at low air flows and rich mixtures at high air flows. The idling jet is necessary in gasoline carburetors as well as most gas carburetors since at the very low air flows encountered when the engine idles, the venturi suction may be so low that the main jet will not supply enough fuel.

Similarly at high speed, wide open throttle operations, the main jet in gasoline carburetors tends to supply too much fuel and some means must be provided to supply less fuel under these conditions. Thus a compensating (or high speed) jet is provided to correct this situation.

Too-Rich Mixtures Seldom Occur

The tendency for over-rich mixtures at high air flows is seldom encountered in LP-Gas carburetors but it is still necessary to furnish lean mixtures at part throttle operation for maximum economy and rich mixtures at full throttle operation for maximum power. In some types of regulators the necessary compensation to perform these functions is built into the regulator itself so that the fuel pressure varies slightly over the operating range and gives the desired fuel-air ratios.

In most of them some additional means of compensation is provided to give the required lean mixtures at part throttle operating conditions. This is generally done by means of an economizer which is

simply a device operated by manifold suction which partially restricts the main gas passage when the manifold vacuum is high. Since the manifold vacuum is high only under part throttle operating conditions, this is a very convenient means of restricting fuel flow under part throttle conditions and works very satisfactorily.

Since tractor engines operate over a narrow speed range compared to truck or passenger car engines, the carburetion job is much easier. A tractor engine will usually idle faster than a car or truck engine and its top speed is considerably lower. Tractors will usually idle around 500 RPM and have a top speed of about 1500 RPM. Car or truck engines usually idle around 300 RPM and have a top speed ranging up to 3600 RPM. From the previous discussion on the effect of very slow and very fast air speed through the venturi it is readily apparent that a tractor can use a much simpler carburetor. A few of the systems do not have special idling and starting systems. I believe you can see from this discussion why some of the simplified systems which work perfectly well on tractors do not perform too well on truck or car engines.

So far no mention has been made of heat exchangers or vaporizers. However, the statement has been made that the inlet pressure to the final regulator must be constant if the fuel flow to the engine is to be controlled accurately. It should also have been stated that the fuel must be completely vaporized before it reaches the final regulator.

When Vaporizer Is Needed

When the fuel requirement of the engine is not greater than the amount of fuel which can be vaporized in the fuel tank, no special vaporizer or heat exchanger is required. In this case the fuel system will consist of a fuel container, a high pressure vapor regulator, a final regulator and a carburetor. Whenever the fuel requirement of the engine is greater than the amount of vapor which can be taken from the fuel containers, some other means of vaporizing fuel must be devised.

Figure 5 shows a conventional fuel system using liquid fuel from the tank, a primary liquid regula-

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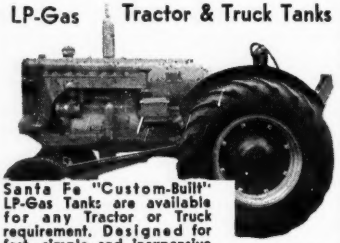
LP-Gas Tractor & Truck Tanks



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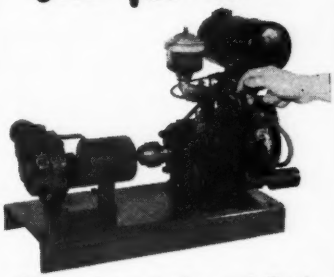
tor, a heat exchanger, a final gas regulator and a carburetor. This particular heat exchanger consists of a series of copper coils through which the fuel flows, surrounded by hot water from the cooling system. As the fuel flows through the coils it picks up enough heat from the water to completely vaporize it. From this point on the system is, in principle, the same as the one we have been discussing.

It makes no difference how or where the fuel enters the air stream as long as it enters in the correct proportion and is completely mixed with air before it enters the cylinder. There are all types, sizes, and shapes of carburetors but in every case the fuel enters the venturi in some way or other. There are all types and sizes of regulators and/or convertors, but in principle they all do the same thing.

Fuel Lines Made Large

Load adjustments or fuel-air ratio adjustments in LP-Gas systems are simply variable restrictions in the fuel line between the carburetor and the final regulator. In order to get away from having to make different size fuel lines for each engine, the line is made larger than necessary and then some adjustable means of partially closing it off is provided in order to get the correct fuel flow for any engine. If an economizer is provided it is simply an automatic device to further restrict the fuel line when the throttle is partially closed and then open it up again when the throttle is opened, giving

Down On the Farm...



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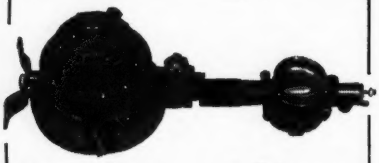

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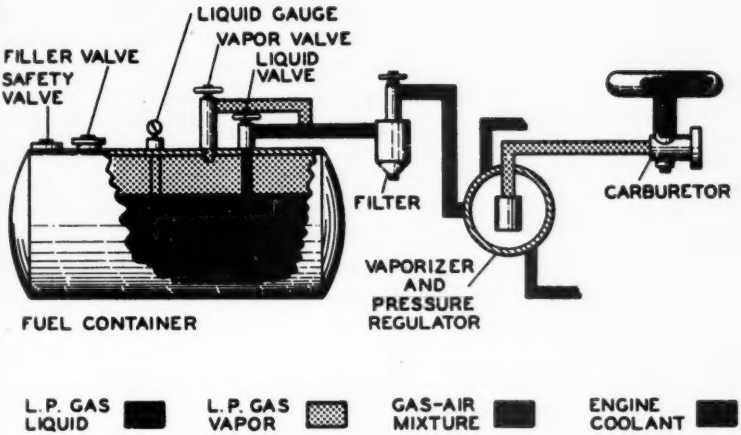

Fig. 5. Flow diagram for LP-Gas application.

lean mixture during part throttle operation for maximum economy.

In summary, the essential parts of an LP-Gas carburetion system are shown below:

1. *Fuel container*—The primary function of a fuel container is obvious. In the vapor withdrawal system the fuel container also acts as a vaporizer or heat exchanger to supply vaporized fuel to the rest of the system.

2. *High pressure regulator*—The purpose of the high pressure regulator is to reduce the variable tank pressure to some constant pressure at the inlet to the final fuel controller. In this function it may be compared to the fuel pump in a liquid carburetion system in that it supplies fuel to the metering mechanism at a constant pressure.

3. *Heat exchanger*—In liquid feed systems the purpose of the heat exchanger is to supply the necessary heat to convert fuel from the liquid to the vapor stage. In the vapor withdrawal system this function may be carried out by the fuel container itself but in any case, the heat exchanger must supply enough heat to completely vaporize the fuel before it gets to the final control mechanism.

4. *The final regulator*—The purpose of the final regulator is to hold fuel at a constant pressure (slightly below atmospheric pressure) ahead of the fuel regulating screw and to shut off the fuel flow when the engine is not running.

5. *The venturi*—The venturi is the brains or the sensing element of the whole system. As stated before, it is primarily a device for supplying the signal which tells

LP-Gas Filling Station Directory

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Northern Indiana Petreloum Gas Co.
3333 Maumee, Hwy 24 & 30E
Delmar Groman

Wayne Propane Gas
US Hwy 24W at Penn. RR
Open 8 a.m. to 8 p.m.
Phone: E-4963
Frank Conrad

Goodland

Fred Crowden Sales
Hwy 24
Conversions; service
Open 24 hrs
Phone: 204

Michigan City

Frey Bros. Modern Equipment Inc.
Hwy 12

Peru

Indiana Bottled Gas Co.
115 Van Buren, Hwy 24 & 31
Conversions; service
Open 24 hrs.
Night phone: 5533
Day phone: 5531
Tom Crowden

TEXAS

Galveston, Texas, has three test buses running on propane and Fort Worth plans a similar trial.

Florida Utility Buys Bottled Gas Business

Alvan H. Stack, president of the Tampa Gas Co., a manufactured gas utility, has announced the company's expansion into the bottled gas industry through purchase of the Tampa Bottle Gas Co., of Tampa, and the Allied Bottle Gas Co. of St. Petersburg, serving 1600 customers in Hillsborough and Pinellas counties.

Mr. Stack said a new corporation, Tampa Bottled Gas Co., had been organized with the same officials as the Tampa Gas Co. to operate the new service. Earl McPhillips and Francis McPhillips of the selling companies will be managers in Tampa and St. Petersburg, and all their former employes will be retained.

The sale included facilities of the former company with headquarters at 5800 East Broadway, a fleet of tank and service trucks, and storage for 48,000 gallons of liquefied petroleum gas. In addition, the Tampa Gas Co. has erected storage tanks for 50,000 gallons adjoining its tanks for manufactured gas.

Second Western Service School At Berkeley, Calif., Aug. 29-31

Plans for the second 3-day Western LP-Gas Service School are now formed by the Liquefied Petroleum Gas Assn. Educational committee for Districts Nos. 1 and 2. The school is scheduled for Aug. 29-31, and will be held on the Berkeley campus of the University of California.

Designed for 200 or more LP-Gas servicemen and others interested in the LP-Gas industry, the school will offer comprehensive instruction and demonstrations by leading men in the industry.

Subjects to be covered will include:

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The Barrett Division
J. B. Beaird Co., Inc.
Bellco Industrial Piping Co.
Bethlehem Supply Co.
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Black, Sivalls & Bryson, Inc.
Blaw-Knox Construction Co.
Braden Steel Corp.
The Bristol Co.
Brown Fintube Co.
The Brown Instrument Co.
Brown and Root, Inc.
The Bruce-Macbeth Engine Co.
BUTANE-PROPANE News
Byron Jackson Co.
Cameron Iron Works, Inc.
Chicago Bridge and Iron Co.
Clark Brothers Co., Inc.
The Condit Co.
Continental Supply Co.
Cooling Tower Service, Inc.
The Cooper-Bessemer Corp.
Joseph A. Coy Co.
Crane Packing Co.
W. H. Curtin and Co.
Dallas Tank Co., Inc.
Daniel Orifice Fitting Co.
Davis Regulator Co.
De Laval Steam Turbine Co.
Delta Engineering Corp.
Dresser Engineering Co.
E. I. duPont deNemours & Co., Inc.
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John W. Elder Co.
Elliott Co.
Engineers and Fabricators, Inc.
Ethyl Corp.
The Fish Engineering Corp.
The Fisher Governor Co.
Flint Steel Corp.
The Fluor Corp., Ltd.
The Foxboro Co.
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Warner Lewis Co.
A. M. Lockett and Co., Ltd.
The Lubriscosos Specialties Mfg.
The Lunkenheimer Co.
Maintenance Engineering Corp.
Manning, Maxwell and Moore
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W-K-M Co.
Woobank Machinery Co.
World Petroleum
Worthington Pump and Mach. Corp.
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Portion of the education committee drawing up plans for the 1951 Western LP-Gas service school, left to right: Ben Marsh, LPGA West Coast secretary, San Francisco; Henry C. Haar, Fresno; John Knox Smith, LPGA, Chicago; R. C. Harris, Upland, Calif.; and Fred Arnberg, Yreka, Calif.

"Properties and Characteristics of LP-Gas"; "LP-Gas and Carburetion"; "Venting for Home and Industry"; "Tank and Outside Fittings"; "Space Heating"; "Pilot Generated Controls"; "Electric Controls" and "Customer Relations."

District No 1, Oregon, Idaho, and Washington; and District No. 2, Arizona, California, and Nevada, will be the hosts for the service school.

Crowds Visit Dealer's Store To Witness Wedding

Taking a cue from neighborhood theaters which have built patronage in this way, and staging a complete wedding in the store is the novel means of stimulating appliance sales which has been developed by Myron Dragieff, partner with Steve Stevenson, at Steve's Appliances, Englewood, Colo.

The wedding was held last fall in the store's model kitchen, and drew more than 250 people, to cram the store from wall to wall. The actual ceremony was aired over a 15-minute radio broadcast, presented daily from the Steve's Appliance store, with around 40 retailers in the Englewood district cooperating. Each of the retailers supplied a gift for the couple, a pair of young college students, including a diamond ring, carpets, clothing, laundry service, dishes, hardware, sporting goods, baked products, small appliances, etc.

"The wedding got a lot of interest," Mr. Dragieff said, "inasmuch as the young couple had been previously presented on our daily radio show. During the afternoon affair, which was carried off with plenty of dignity and appreciation, we brought in at least 500 people who had never before visited the store."

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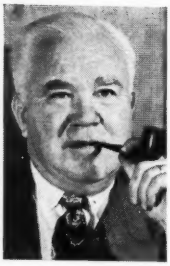

H. J. SMITH

CECIL M. DUNN

Russell Jarrett

The Estate Stove Co., Hamilton, Ohio, is expanding operations to the Pacific Coast with the acquisition in February of the Ward Heater Co., Los Angeles, manufacturer of floor furnaces, it is announced by Cecil M. Dunn, vice president and general manager of Estate Stove, a subsidiary of Noma Electric Corp.

This will broaden Estate production and increase its West Coast distribution outlets. Barring restrictions on production imposed by the government, the company will continue to service Ward dealers exactly as in the past.

Ward Heater Co., which has annual sales of $2,500,000, was established some 41 years ago by Fred Ward, inventor of the original floor furnace, principal product of the company. Ward products are distributed throughout California and the Southwest. Mr. Dunn will head the new division.

Dick Montrief, who has been vice president of Ward for some time, will continue in that capacity under the new setup and will have complete charge of all manufacturing activities. Russell Jarrett, formerly Estate Western regional manager in the San Francisco area, now will be vice president in charge of sales for the combined operation out of the Los Angeles office.

H. J. Smith, owner and president of Ward Furnace in the past, is retiring but will be available for consultation.

The Ward company will continue to manufacture its present heater line. Plans call for investment in new equipment and increased capacity with a view toward adding to the Ward line some of the products now manufactured by Estate, plus new products to round out Ward's summer operations.

This acquisition marks the second expansion of Estate facilities in the past few months. Early in December Estate acquired Toledo Desk & Fixture Co., Maumee, Ohio, manufacturer of kitchen cabinets and sinks.

The appointment of Joe Wallace as assistant sales manager of the western division, **John Wood Co.** heater and tanker division, has been announced by R. W. Simpson, vice president and general sales manager.

Mr. Wallace, who has been with the company 23 years, has recently served as district manager of the western Pennsylvania territory.

Transfer of C. W. Haley, former southeastern field representative of **Hamilton Manufacturing Co.**, to the Two Rivers, Wis., headquarters to assist C. H. Rippe, sales director, has been announced. His new duties will consist of scheduling and expediting production, handling correspondence, and working on problems resulting from the current world crisis.

D. C. McDermand, former Eastern field representative, has been appointed special utility representative to do contact and promotional work with utilities. His new duties will be closely coordinated with the activities of the regular Hamilton field representatives.

R. C. Burbidge, of the southwestern territory, will replace Mr. McDermand in upper New York and New England.

Pacific Gas Corp., New York, recently named Montgomery F. Woodruff to the position of chief engineer for the company. Mr. Woodruff has served as a field supervising engineer, designing and installing LP-Gas plants for public utility and industrial installations.

According to J. H. Sands, executive vice president, **Eclipse Fuel Engineering Co.**, Rockford, Ill., Donald A. Campbell has been named vice president in charge of engineering and research. Previously associated with Affiliated Gas Equipment, Inc., and H. L. Doherty & Co., Mr. Campbell was also with Eclipse as a gas combustion engineer from 1929 through 1939.

The company has also announced the appointment of Charles F. Bishop, Dallas, as McKee-Eclipse representative for the northern section of Texas and all of Oklahoma.

Now included in all Universal gas ranges, according to **Cribben & Sexton Co.**, Chicago, is a 52-page, full-colored "care and use" book which incorporates everything the range owner should know about her range.

Instructions for all phases of range use are given, including setting the various automatic features of the range and explanations for making minor adjustments and repairs. Thirty-two pages of recipes and a nutrition chart are also included.

Stockholders of **Minneapolis-Moline Co.** and **B. F. Avery & Sons Co.**, of Louisville, Ky., approved a merger of the two companies at special meetings held Feb. 27. The merger became effective March 1. Both companies manufacture farm tractors, machinery and implements.

It is also announced that Philip H. Noland, president of Avery, was named a vice president of Minneapolis-Moline. Two other Avery officials were appointed to positions with Minneapolis-Moline. S. C. Turkenkoph, vice president and treasurer, was elected assistant treasurer of MM, and G. A. Sommers, Jr., secretary, was appointed assistant secretary of MM.

The American housewife is becoming fussy on one point when she buys a new kitchen range. It must be easy to keep clean, a check-up on 7000 gas

range users throughout the country shows.

According to the Merchandising Institute, which made the survey for **Caloric Home Institute**, 69% of the women mentioned easy-to-clean features as deciding factors in their purchase of a new range.

Top burners come next in order of importance with a showing of nearly 31%. Importance of the top burner in preparation of meals is shown by the fact that 80% of cooking is done on the top of the range.

One of the most interesting points developed by the survey is determination of 18½ years as the average replacement age of a gas range among the 7000 users queried. Generally, 12 years is considered the age at which a modern range is outmoded by constantly continuing improvements.

America's greatest physical asset is its sound civilian economy, Louis Ruthenburg, chairman of the board of **Servel, Inc.**, Evansville, Ind., told distributors and gas utility representatives attending his company's annual sales convention.

Mr. Ruthenburg's address preceded the anouncement by W. Paul Jones, Servel president, that the company would start with production of its 1951 line of gas refrigerators, water heaters and "All Year" air conditioners, even though unsettled world conditions might curtail civilian production at any time.

Mr. Jones noted that, following this decision, the company spent more money on new tooling and new equipment for this new line than ever before in any one year. He said that government restrictions on materials are severe, and emphasized his com-

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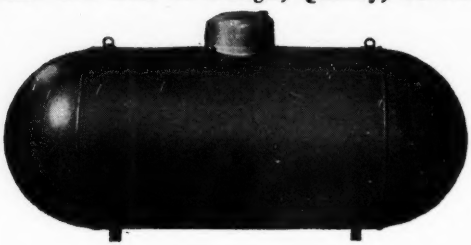

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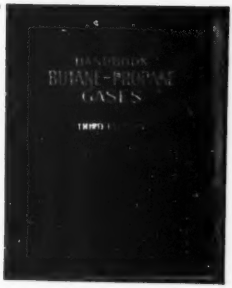

- **Up-to-date technical facts on LP-Gases.**
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- The ABC of LP-Gas, an Introduction to LP-Gas Operations.

PHYSICAL AND CHEMICAL PROPERTIES
- Properties of the Hydrocarbons in LP-Gas.
- Properties of Butane-Propane Mixtures
- Volume Correction Factors
- Analytical Determination and Testing

PRODUCTION OF LP-GAS
- Natural Gasoline Plants, Recycling Plants, Oil Refineries

TRANSPORTATION AND STORAGE
- Delivery by Truck, Rail, Water, and Pipe Lines
- Storage Tank & Pressure Vessel Design
- Liquid Metering and Pumping Systems

UTILIZATION OF LP-GAS
- Comparative Performance with other Fuels
- Appliance Installation and Testing
- Domestic Applications
- Commercial Applications
- Industrial Applications
- Enrichment, Peak Load and Standby Uses
- A Fuel for Internal Combustion Engines

DISTRIBUTION OF LP-GAS
- Installing and Servicing LP-Gas Systems
- Semi-Bulk Systems
- Bottled Gas Systems
- Gas Utility Service from Central Plants
- Multiple Utility Service from a Central Plant

REGULATIONS
- N.B.F.U. Pamphlet No. 58 (1947).
- Motor Carrier Regulations
- Freight Regulations
- Unloading Tank Cars
- Marine Regulations

APPENDIX
- LP-Gas Insurance
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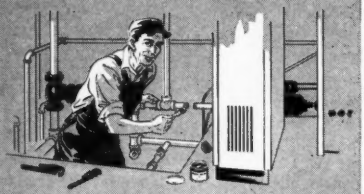

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pany wants no material for peacetime products if it is truly needed for the nation's vitally important defense efforts.

In commenting on the announcement of continued manufacture of gas appliances and equipment, Mr. Ruthenburg said:

"I have talked with the men in Washington responsible for defense production, stockpiling and material control. They have said that, as a matter of primary policy the highest level of civilian production, consistent with military needs, must be maintained."

Robert M. Buck has been named to succeed D. A. Campbell as manager of **Bryant Heater's** industrial division. The announcement is made by J. N. Crawford, director of sales, from the company's headquarters in Cleveland.

Robert "Bob" Buck has been closely associated with industrial gas-fired equipment since 1929 when he first joined the industrial department staff of the Michigan Consolidated Gas Co., of Detroit. He joined the Bryant industrial division in 1944 as division engineer and is credited with many industrial combustion developments now applied by industry.

Thatcher Furnace Co., manufacturer of residential heating equipment, has emphasized its first hundred years of business by recently issuing a pretentious brochure which covers the history of the company since 1850.

The booklet describes the development of the company from its inception up to its present operations in Garwood, N. J., and contains many interesting photographs to illustrate the changes that have taken place over the years.

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LMC Home Delivery Units are engineered to make you money every day of their long life. They are designed and constructed as you would have them if you were personally supervising the job with accent on greater safety, longer life and low-haul-cost-per-mile. High tensile steel and indented fittings assure a superior safety factor. Light weight, low center of gravity, large capacity pump and valves, allow you higher payloads. A needle bearing universal joint with square shaft allows axial movement of shaft which increases the life of the joint. These are just a few of the reasons why the LMC Home Delivery Unit is a money-maker for you! Put it to work for you soon!

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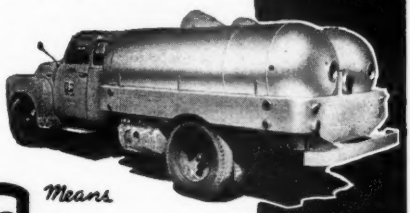

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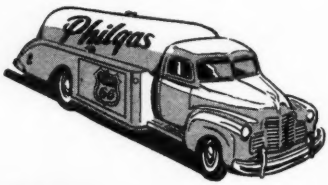

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In recognition of exceptional safety achievement during 1949, the **Dearborn Stove Co.**, Dallas, was presented with the safety trophy of the Texas Employers' Insurance Assn. at a meeting of all employes and their families in December, 1950.

The company operated without a lost-time accident during 1949. Only 31 out of approximately 8000 Texas companies qualified for the award. The trophy, an individually cast bronze plate mounted on a walnut shield, was presented to Ray Hoskins, Dearborn plant superintendent, by E. C. McFadden, vice president in charge of engineering for the insurance association.

Mr. Hoskins accepted the safety award for the company and employes and gave credit to the employes for their fine efforts in making the attainment of the trophy possible. The purpose of the award is to give recognition to the outstanding efforts of a company and its personnel and to hope that it will stimulate them to even greater safety success in the future.

American Meter Co. has announced the appointment of George W. Stevenson as manager of its Los Angeles factory. He has been in the Los Angeles office since 1936 serving as sales engineer and assistant manager. He originally joined the company in San Francisco in 1928.

Several appointments were announced in February by W. F. Rockwell, Jr., president of **Rockwell Manufacturing Co.**, Pittsburgh, Pa.

Paul A. Wick, who joined the legal department of the company in 1946 and became assistant secretary in 1948, has been named assistant to the president.

Munro Corbin, formerly accountant

and assistant controller, is the new controller, replacing J. E. Ashman, vice president, who has been placed in charge of the company's power tool divisions.

I. C. Rowe was elected secretary by the board to replace E. W. Meyers, who retired recently.

Rockwell changes in the Houston area include the transfers of M. F. Groom and R. J. Munn and the addition of W. A. Randle to the sales staff of C. K. Madison, district manager.

Mr. Groom has been in charge of the New Orleans office since joining Rockwell five years ago. In his new Houston position he will handle gas transmission companies and several of the major oil companies.

Mr. Munn, formerly in charge of the Corpus Christi office and now transferred to Houston, has been replaced by Mr. Randle.

D. L. Jerman has been appointed New York district supervisor of gas products and Nordstrom valves used in the gas industry.

Construction of a new plant in Tupelo, Miss., will get under way shortly, according to Mr. Rockwell. The 150,000 sq. ft. plant will employ approximately 300 people.

Day & Night Division, Affiliated Gas Equipment, Inc., Monrovia, Calif., has announced the appointment of Gene MacFarland as advertising and sales promotion manager.

After 39 years with **Perfection Stove Co.,** L. S. Chadwick, president and chairman of the board since 1922, has announced his retirement effective March 13.

The Cleveland firm has also announced the appointment of J. D. Stevenson as assistant export manager.

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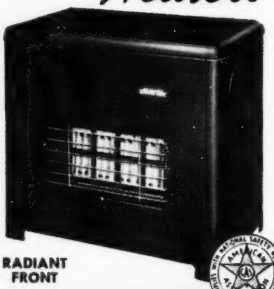

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THE NEWEST IN GAS HEATERS BY THE OLDEST STOVE FACTORY IN THE U. S. A.

In line with the consolidation move preceded by the transfer of its Lorain, Ohio, sales management to the St. Louis, Mo., headquarters last August, the **American Stove Co.** has announced the availability of a complete line of products being sold under the Magic Chef trade name. According to Marc W. Pender, vice president in charge of sales, this includes the firm's full line of domestic gas ranges, commercial cooking equipment, gas and oil space heaters, and oil cook stoves.

The "Quick-Heat" line of gas and oil space heaters and the "Quick Meal" line of oil stoves, manufactured at the Lorain plant, are the two brands which acquired the Magic Chef label as of Jan. 1, 1951.

Norman Products Co., Columbus, Ohio, has announced the appointment of David A. Ruen as regional manager in Detroit. His territory will comprise the states of Michigan, Minnesota, Illinois, Iowa, Nebraska, and North and South Dakota.

William R. Sundermeyer, New Rochelle, N. Y., is new regional manager for the states of Maine, Vermont New Hampshire, Connecticut, Rhode Island, Massachusetts, New York, New Jersey, Pennsylvania, Delaware, Maryland, and Virginia.

J. W. Long, manager of the **A. O. Smith Corp.** heating division, Toledo, reports that his company's "Magic Heet Control" featured on A. O. Smith gas conversion burners, now has AGA approval.

The conversion burner has been approved previously, but the control was not introduced until last summer.

New location of the plant and offices of **Schutte & Koerting Co.**, manufacturing engineers, is Cornwells

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Heights, Bucks county, Pa., according to a recent announcement from the company.

Formerly, the company was located at 12th & Thompson Sts. in Philadelphia.

The Delta Tank Manufacturing Co., Inc., of Baton Rouge, La., has been awarded a defense contract in the amount of $7,900,000. H. S. Phillips, president of Delta Tank, pressure vessel manufacturer, made this announcement simultaneously with the release of the order by the chief of the Birmingham Ordinance, Birmingham, Ala.

Mr. Phillips stated that the production of heavy artillery ammunition would not get underway for several months. The company has just completed construction on a new building, covering some 53,000 sq. ft., to house this defense project.

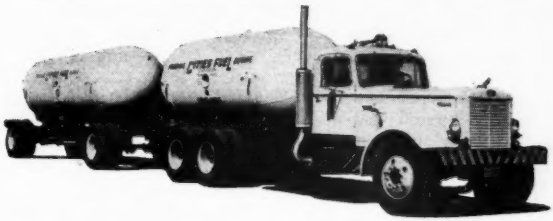
V. R. Ferguson, general manager for Delta, said that present plans are to employ approximately 400 men.

B. K. Ruddock, president of **Roney, Inc.**, Inglewood, Calif., announces the appointment of Everett Fairlamb as assistant general manager for the corporation, which manufactures LP-Gas control equipment.

A graduate of Virginia Polytechnic Institute, Mr. Fairlamb moves to Roney from National Gypsum Co. where he served as manager and sales engineer of the industrial installations division.

Three additional vice presidents were added to the Sunray Oil Corp. executive management group by appointment from president C. H. Wright and confirmed by the company's board of directors in Tulsa March 9.

The new officers, all of whom have



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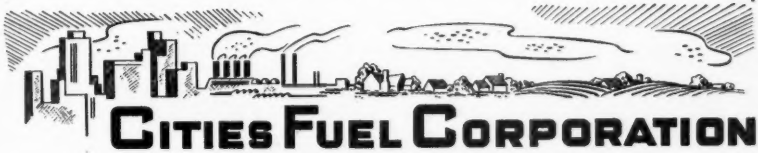

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been identified with Sunray since last June 23, joined the company from the former Barnsdall Oil Co. when it was merged into Sunray. They were M. Darwin Kirk, named vice president and general attorney; Harold W. Manley, named vice president and general superintendent for Sunray's California production division; and R. E. Foss.

E. Holley Poe, Gas Official, Dies in Tulsa, Okla.

E. Holley Poe, prominent gasman, died of a heart attack March 9 while visiting in Tulsa. He was 57.

Mr. Poe first became connected with the gas industry in 1918 when he joined Tidal Oil Co., now known as Tide Water Associated Oil Co. Two years later he moved to Tiger Mountain Oil Co. where he supervised natural gas and natural gasoline operations for its subsidiary, Henryetta Gas Co., Tulsa. In 1937 he resigned an executive position with that company to become secretary of the AGA's natural gas section in New York, remaining there until 1942 when he joined the Office of Petroleum Coordination for War.

Mr. Poe later served as executive officer and general manager of the Petroleum Reserves Corp., an agency charged with making efficient use of foreign oil facilities to help supply American fighting forces. After the war, he represented Texas Eastern Transmission Corp., Houston, in its purchase of the Big and Little Inch lines. After retiring from his governmental duties, Mr. Poe also founded E. Holley Poe & Associates, New York engineering firm, which he headed.

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". . . This certifies that Hydro Gas Co. of West Florida, Inc., has operated without a lost-time accident for 676 days, totalling 113,700 man-hours," reads the Certificate of Merit presented by the United States Fidelity & Guaranty Co. to the Florida company operated by Don D. Stow as president. The certificate is issued in recognition of "a commendable safety achievement."

According to M. E. McKay, general manager, the company delivered nearly 2,000,000 gals. of LP-Gas, made 3500 service calls, and 590 new installations during the period.

To bring about a more coordinated company operation, and better customer service, a two-way radio system has been installed recently between the three Hydro Gas stores and company cars and trucks. Headquarters are in Pensacola with branches

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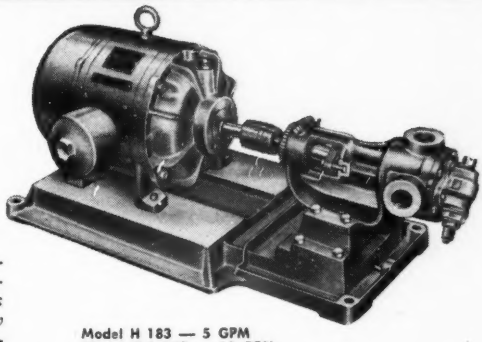

Model H 183 — 5 GPM
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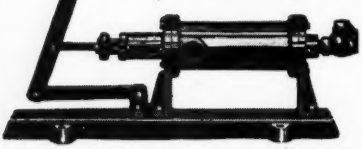

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in Milton and Fort Walton. The company slogan, "All we have to sell is service," is further emphasized by this new service feature.

European LP-Gas Markets Expanded Rapidly in 1950

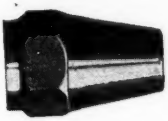
The expansion of the LP-Gas industry in European markets was witnessed last summer by reports originating in England, France, and Italy showing another spurt ahead in butane and propane use for commercial and domestic purposes.

Britain reported that mobile butane units, for heating water in rural and agricultural regions, have been selling rapidly. Introduced by W. J. Merifield, designer of the portable units, the LP-Gas heaters are finding special success in areas where hot water was heretofore drawn from a central source for community use. Farm hot water requirements are better met by the Merifield units, the portability of which allows greater efficiency and convenience.

Meanwhile, Scotland sources said that LP-Gas sales in the northern country are on the increase, with butane firms reporting 50%-100% rises in customer totals. Reasons for the boom are the greater availability of gas and the first aggressive selling campaigns possible in recent years.

An Italian company has big plans for propane service, too. Pibigas (Idrocarburi e Affini S.p.a.) has contracted with North American Petroleum Gas Corp., New York, for propane equipment including 12 storage tanks of 30,000 gals. and 18,000 gals. capacities, 18 5000-gal. tanks, and 6 1750-gal. portable tanks. Also included are 20 trucks and trailer tanks. North American will deliver to Pibigas 59 compressors and pumps, 12 automatic dispensers, gas analyzers,

HARTWELL



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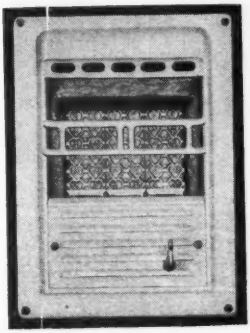

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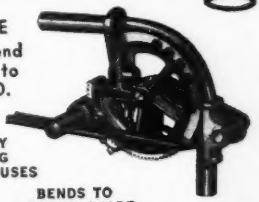

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and special accessories. Thirty-six propane storage and filling stations in Italy will be supplied by the order, which is the largest export order for propane bottle-filling equipment ever sent to Europe from the U.S.

North American Petroleum also announced recently that it will supply all equipment necessary to convert 29 gas-manufacturing plants to propane production in France. Gaz de France, the government agency that operates the French gas industry, will buy all necessary tanks, compressors, vaporizers, meters, etc.

Cut Lines Reversed

In the February issue of BUTANE-PROPANE *News* (pp. 122-123) the cut lines for the two lower pictures were reversed.

The picture on the left is of a generator operating a dehydrating plant in Missouri but the caption described it as a 100-hp LP-Gas unit operating a planer and edger at a sawmill in Mississippi. The sawmill is on the opposite page.

If readers will just transpose these captions in any future reference to the pictures, they will not be led astray.

Pushes Industrial Sales

The name, Border Butane & Oil Co., El Paso, suggests that this company does business on both sides of the border but R. H. Dwigans says that although he started doing business on the Mexican side a number of years ago, Mexican LP-Gas companies have now sprung up to take care of the requirements. Dwigans says he is pushing industrial conversion jobs right now in addition to his domestic business. Trailer camp load and ranch load is also important in El Paso.